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October 9, 2014

RECEIVED
OCT 14 2014
CONNECTICUT
SITING COUNCIL

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

EM-SPRINT-NEXTEL-008-130222

ORIGINAL

Re: CT33XC515 Post Inspection Report
719 Amity Rd.
Bethany, CT 06524

Dear Ms. Bachman,

Enclosed you will find a stamped Post Build/Special Inspections Report for the above referenced site.

The approved inspection report concluded that, "Based on this review the project was observed to be completed in general conformance to the project requirements."

Feel free to contact me if you have any questions or need additional information.

Sincerely,

Tina Lopez

Project Manager
Mobile | 646-275-5410
479 Route 17 North | Suite 1A | Mahwah, NJ | 07430
tlopez@infinigy.com

September 26, 2014



Infinigy Engineering
1033 Watervliet Shaker Road
Albany, NY 12205

Attn: Ms. Elizabeth Gregory
E: egregory@infinigy.com

Re: Summary of Special Inspections
Monopole Telecommunications Tower, Antenna Upgrade
Site CT33XC515
Bethany, Connecticut

Dear Ms. Gregory

Terracon Consultants, Inc. (Terracon) is pleased to submit this Summary of special Inspections for the above-referenced tower project. We provided Special Inspections services related to antenna mount upgrades. A Terracon Field Report has been issued under separate cover.

The site is located at 719 Amity Road in Bethany, Connecticut and has been developed with an approximately 150-foot high monopole telecommunications tower and associated equipment cabinets and identified on the project drawings as Site CT33XC515. The project consists of replacing existing antennas and their structural mounts at the 130-foot level.

On September 24, 2014, a Terracon Steel Inspector/International Code Council Bolting Special Inspector visited the site to review previously installed antenna mounts and fastening assemblies for general conformance to the project requirements. Our field review was completed without issue. Based on this review the project was observed to be completed in general conformance to the project requirements.

This Summary of Special Inspections is submitted as a professional opinion of the project conditions as of the date of our visit. Based on observations, which were completed at a specific time and specific location, Terracon is of the opinion that the foregoing is representative of the project to date. This report in no way relieves any party responsible for the project related construction from meeting the requirements imposed by contract or other means, including commonly accepted industry practices. To the best of my information, knowledge and belief, the Special Inspections required for this project, have been performed and discovered discrepancies have been reported and resolved. If you have questions or require further assistance concerning this document, please do not hesitate to contact the undersigned.

Terracon Consultants, Inc. 201 Hammer Mill Road, Rocky Hill, Connecticut 06067
P (860) 721 1900 F (860) 721 1939 terracon.com

Environmental

Facilities

Geotechnical

Materials

Summary of Special Inspections

Monopole Telecommunications Tower Upgrade ■ Bethany Connecticut
September 26, 2014 ■ Terracon Project No. J2141231



We appreciate the opportunity to be of service to you on this project. If you have any questions regarding the information presented in this report or if we can be of further assistance to you, please feel free to contact us.

Sincerely,
Terracon Consultants, Inc.

Timothy J. Derr
Special Inspections Representative

/tjd/J2141231

A handwritten signature in blue ink, appearing to read "Ryan R. Roy".

Ryan R. Roy, P.E.
Senior Principal/Division Manager





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

March 8, 2013

David Weisman
Vertical Development LLC
7 Sycamore Way, Unit 1
Branford, CT 06405

RE: **EM-SPRINT-NEXTEL-008-130222** – Sprint Nextel Corporation notice of intent to modify an existing telecommunications facility located at 719 Amity Road, Bethany, Connecticut.

Dear Mr. Weisman:

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:

- The coax cables shall be installed in accordance with the recommendations made in the Structural Analysis Report prepared by GPD Group dated February 1, 2013 and stamped by John Kabak; 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 recommendation of the structural analysis.
- Any deviation from the proposed modification as specified in this notice and supporting materials with 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;

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 February 20, 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.

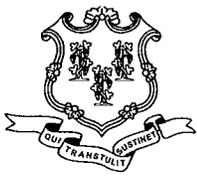
Very truly yours,



Linda Roberts
Executive Director

LR/CDM/cm

c: The Honorable Derrilyn Gorski, First Selectman, Town of Bethany
Isabel Kearns, Zoning Enforcement Officer, Town of Bethany



STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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March 8, 2013

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7 Sycamore Way, Unit 1
Branford, CT 06405

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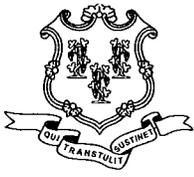
Very truly yours,



Linda Roberts
Executive Director

LR/CDM/cm

c: The Honorable Derrylyn Gorski, First Selectman, Town of Bethany
Isabel Kearns, Zoning Enforcement Officer, Town of Bethany



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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E-Mail: siting.council@ct.gov

www.ct.gov/csc

February 25, 2013

The Honorable Derrylyn Gorski
First Selectman
Town of Bethany
40 Peck Road
Bethany, CT 06524-3338

RE: **EM-SPRINT-NEXTEL-008-130222** – Sprint Nextel Corporation notice of intent to modify an existing telecommunications facility located at 719 Amity Road, Bethany, Connecticut.

Dear First Selectman Gorski:

The Connecticut Siting Council (Council) received a request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72, a copy of which has already been provided to you.

If you have any questions or comments regarding the proposal, please call me or inform the Council by March 11, 2013.

Thank you for your cooperation and consideration.

Very truly yours,

Linda Roberts
Executive Director

LR/cm

c: Isabel Kearns, Zoning Enforcement Officer, Town of Bethany



EM-SPRINT-NEXTEL-008-130222

11 Road, Suite 130
Atlanta, Georgia 30062
Phone: (678) 444-4463
Fax: (678) 444-4472
www.infinigy.com

February 20, 2013

Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051
Attn: Ms. Linda Roberts, Executive Director

Re: 719 Amity Road, Bethany, CT

ORIGINAL

RECEIVED
FEB 22 2013
CONNECTICUT
SITING COUNCIL

Dear Ms. Roberts,

On behalf of Sprint Nextel Corporation ("Sprint"), enclosed for filing are an original and two (2) copies of Sprint's Notice of Exempt Modification for Proposed Modifications to an Existing Telecommunications Facility located at the above-referenced site.

I also enclose herewith a check in the amount of \$625.00 representing the fee for the Notice of Exempt Modification.

If you have any questions, please feel free to contact me.

Thank you,

By: 

Name: David Weisman
Vertical Development LLC, an authorized representative of Sprint Nextel
Vertical Development LLC
7 Sycamore Way, Unit 1
Branford, CT 06405
Phone – 401-743-9011
Fax – 401-633-6202
DWeisman@verticaldevelopmentllc.com

CC: Ms. Derrylyn Gorski, First Selectman
Bethany Town Hall
40 Peck Road
Bethany, CT 06524

Notice of Exempt Modification

719 Amity Road, Bethany, CT

Sprint Nextel Corporation ("Sprint") submits this Notice of Exempt Modification to the Connecticut Siting Council ("Council") pursuant to Sections 16-50j-73 and 16-50j-72(b) of the Regulations of Connecticut State Agencies ("Regulations") in connection with Sprint's planned modification of antennas and associated equipment on an existing 150' monopole tower located at 719 Amity Road in the Town of Bethany. More particularly, Sprint plans to upgrade this site by adding 4G LTE technology to its facilities. The proposed modifications will not increase the tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six (6) decibels, or add radio frequency sending or receiving capability which increases the total radio frequency 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 Connecticut General Statutes § 22a-162.

To better meet the growing voice and data demands of its wireless customers, Sprint is upgrading their network nationwide to include 4G technology, which will provide faster service and better overall performance. Pursuant to the 4G upgrade at this site, Sprint will add antennas, install RRHs and notch filters, and install related equipment to its equipment area within the fenced compound at the base of the tower.

The 150' monopole tower located at 719 Amity Road in the Town of Bethany (lat. 41° 26' 33.83", long. 72° 59' 32.84") is owned by AT&T. It is in a 5,500+ square foot fenced compound within a 10,000 square foot area. Sprint currently has six (6) antennas (two (2) per sector) with a centerline of 130' installed on the tower. Sprint's base station equipment is located adjacent to the base of the tower within the fenced compound. A site plan depicting this is attached.

Sprint plans to add three (3) RFS APXVSPP18-C-A20 antennas, one (1) per sector, all with a centerline of 130'. Connected to each new RFS antenna will be one (1) ALU 800 MHz RRH with one (1) ALU 800 MHz notch filter attached to it and one (1) ALU 1900 MHz RRH, all of which will be located behind the antenna on a ring mount.

After the new antennas have been tested and are deployed on-air, the six (6) previously existing antennas will be removed. The height of the monopole will not need to be increased. Sprint also plans to install a new fiber junction box on a new H-frame and a new Ciena equipment enclosure into their equipment space within the tower compound's fenced border, and to extend the ice bridge and retrofit or replace the existing BTS cabinet. The compound's boundaries will not need to be extended. Other than brief, construction-related noise, these modifications will not increase noise levels at the tower site boundary by six (6) decibels.

AT&T commissioned GPD Group to perform a structural analysis of the tower and foundation to verify that they can support Sprint's proposed loading. The results of the analysis show that the tower passed at 85.0% and the foundation passed at 54.3% (see the first page of Structural Analysis Report, February 1, 2013). Sprint commissioned EBI Consulting to perform a structural assessment of the existing mounting system. They concluded that the existing mounting system is "[C]apable of supporting the existing and proposed equipment without causing an overstress condition in the mounting system" (see the second page of Structural Assessment Letter, August 31, 2012).

The proposed modifications will not add radio frequency sending or receiving capability which increases the total radio frequency 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 Connecticut General Statutes § 22a-162. A radio frequency emissions analysis prepared by EBI Consulting indicates that the proposed final configuration (including other carriers on the tower) will emit 37.689% of the allowable FCC established general public limit sampled at the ground level (see the 5th page of Radio Frequency Emissions Analysis Report - Evaluation of Human Exposure Potential to Non-Ionizing Emissions, September 05, 2012). Emission values for the Sprint antennas have been calculated from the sample point, which is the top of a six foot person standing at the base of the tower. Emissions values for additional carriers were based upon values listed in Connecticut Siting Council active database (see the 3rd and 4th page of Radio Frequency Emissions Analysis Report - Evaluation of Human Exposure Potential to Non-Ionizing Emissions,

September 05, 2012). The information used in the 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 (see the second page of Radio Frequency Emissions Analysis Report - Evaluation of Human Exposure Potential to Non-Ionizing Emissions, September 05, 2012).

In conclusion, Sprint's proposed modifications do not constitute a modification subject to the Council's review because Sprint will not change the height of the tower, will not extend the boundaries of the compound, will not increase the noise levels at the site, and will not increase the total radio frequency electromagnetic radiation power density at the site to levels above applicable standards. Therefore, Sprint respectfully requests that the Council acknowledge that this Notice of Exempt Modification meets the Council's exemption criteria.



719 Amity Road, Bethany, CT



Imagery ©2013 DigitalGlobe, GeoEye, U.S. Geological Survey, USDA Farm Service Agency

719 Amity Road, Bethany, CT

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

Sprint Existing Facility

Site ID: CT33XC515

Bethany Spectrasite
719 Amity Road
Bethany, CT 06524

September 05, 2012

September 05, 2012

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

Re: Emissions Values for Site **CT33XC515 – Bethany Spectrasite**

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 719 Amity Road, Bethany, 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.

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 719 Amity Road, Bethany, 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) 2 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 APXVSP18-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 **130.4 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	CT33XC515 - Bethany Spectrasite
Site Address	719 Amity Road, Bethany, CT 06524
Site Type	Monopole

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 (dBi)	Antenna Height (ft)	analysis height	Cable Loss	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	RFS	APXSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	2	40	15.9	130.4	124.4	0.5	0	1386.9474	32.21998	3.22200%
1a	RFS	APXSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	130.4	124.4	0.5	0	389.96892	9.059312	1.59776%
Sector total Power Density Value:													4.820%			

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 (dBi)	Antenna Height (ft)	analysis height	Cable Loss	Additional Loss	ERP	Power Density Value	Power Density Percentage
2a	RFS	APXSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	2	40	15.9	130.4	124.4	0.5	0	1386.9474	32.21998	3.22200%
2a	RFS	APXSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	130.4	124.4	0.5	0	389.96892	9.059312	1.59776%
Sector total Power Density Value:													4.820%			

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 (dBi)	Antenna Height (ft)	analysis height	Cable Loss	Additional Loss	ERP	Power Density Value	Power Density Percentage
3a	RFS	APXSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	2	40	15.9	130.4	124.4	0.5	0	1386.9474	32.21998	3.22200%
3a	RFS	APXSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	130.4	124.4	0.5	0	389.96892	9.059312	1.59776%
Sector total Power Density Value:													4.820%			

Site Composite MPE %	
Carrier	MPE %
Sprint	14.459%
Bethany Fire	0.420%
Bethany Highway	0.700%
AT&T	4.280%
Verizon Wireless	12.290%
MetroPCS	5.540%
Total Site MPE %	37.689%

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 **14.459% (4.820% 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 **37.689%** 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

SUMMARY & RESULTS

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

Modifications designed by B&T Engineering (Project #: 83154.003a, dated 2/21/12) were considered in this analysis. Modifications designed by B + T GRP (Job #: 84427.0002, dated 7/19/2012) were considered in this analysis.

The proposed coax shall be installed internal to the monopole for the analysis to be valid.

TOWER SUMMARY AND RESULTS

Member	Capacity	Results
Monopole	85.0%	Pass
Anchor Rods	77.3%	Pass
Base Plate	45.2%	Pass
Foundation	54.3%	Pass

ANALYSIS METHOD

TnxTower (Version 6.0.4.0), a commercially available software program, was used to create a three-dimensional model of the tower and calculate primary member stresses for various dead, live, wind, and ice load cases. Selected output from the analysis is included in Appendix B. The following table details the information provided to complete this structural analysis. This analysis is solely based on this information and is being completed without the benefit of a detailed site visit.

DOCUMENTS PROVIDED

Document	Remarks	Source
Preliminary Tower Summary	Sprint Co-location document, uploaded 7/23/2012	Siterra
Site Lease Application	Sprint Application, dated 7/5/2012	Siterra
Tower Design	Valmont Order #: 11114-95, dated 8/9/95	Siterra
Foundation Investigation	TEP Project #: 120571.04, dated 2/16/12	Siterra
Geotechnical Report	WEI Project #: 2008.653, dated 10/31/08	Siterra
Modification Drawings	B&T Engineering Project #: 83154.003a, dated 2/21/12	Siterra
Modification Drawings	B + T GRP Job #: 84427.0002, dated 7/19/2012	Siterra
Previous Structural Analysis	B&T Engineering Project #: 84427.001, dated 6/5/12	Siterra

ASSUMPTIONS

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

1. The tower shaft sizes and shapes are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated in the materials section.
2. The antenna configuration is as supplied and/or as modeled in the analysis. It is assumed to be complete and accurate. All antennas, mounts, coax and waveguides are assumed to be properly installed and supported as per manufacturer requirements.
3. Some assumptions are made regarding antennas and mount sizes and their projected areas based on best interpretation of data supplied and of best knowledge of antenna type and industry practice.
4. All mounts, if applicable, are considered adequate to support the loading. No actual analysis of the mount(s) is performed. This analysis is limited to analyzing the tower only.
5. The soil parameters are as per data supplied or as assumed and stated in the calculations.
6. Foundations are properly designed and constructed to resist the original design loads indicated in the documents provided.
7. The tower and structures have been properly maintained in accordance with TIA Standards and/or with manufacturer's specifications.
8. All welds and connections are assumed to develop at least the member capacity unless determined otherwise and explicitly stated in this report.
9. All prior structural modifications are assumed to be as per data supplied/available and to have been properly installed.
10. Loading interpreted from photos is accurate to $\pm 5'$ AGL, antenna size accurate to ± 3.3 sf, and coax equal to the number of existing antennas without reserve.
11. All existing loading was obtained from the previous Structural Analysis by GPD (Job #: 2012856.84 Rev 1, dated 8/23/2012), site photos and the provided Preliminary Tower Summary form and is assumed to be accurate.
12. The existing AT&T loading varies between the previous structural analysis by GPD (Job #: 2012856.84 Rev 1, dated 8/23/2012) and the provided Preliminary Tower Summary. The existing loading used was based on the previous analysis.
13. The proposed coax shall be installed internal to the monopole for the analysis to be valid.
14. The AT&T future loading has been modeled based on the generic future loading scenario.

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

DISCLAIMER OF WARRANTIES

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

The engineering services rendered by GPD GROUP in connection with this Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. All tower components have been assumed to only resist dead loads when no other loads are applied. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

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

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

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

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

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

APPENDIX A

Tower Analysis Summary Form

Tower Analysis Summary Form

General Info

Site Name	BETHANY
Site Number	61186
PA Number	10035070
Date of Analysis	2/12/2013
Company Performing Analysis	GPD

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

Tower Info

Description	Date
Tower Type (G, SST, MP)	
Tower Height (top of steel AGL)	150'
Tower Manufacturer	Valmont
Tower Model	n/a
Tower Design	Valmont Order #: 11114-95
Foundation Investigation	TEP Project #: 120571.04
Geotech Report	WIEL Project #: 2008.653
Tower Mapping	n/a
Previous Structural Analysis	SFP Job #: 2012656.64 Rev. 1
Foundation Mapping	IS&T Engineering Project #: 83154.003a
	8/2/2012
	2/21/2012

Design Parameters

Design Code Used	THA/EIA-222-F
Location of Tower (County, State)	2006-IBC & 2005-CBC
Basic Wind Speed (mph)	New Haven, CT
Ice Thickness (in)	90 - Fastest
Structure Classification (I, II, III)	0.75
Exposure Category (B, C, D)	
Topographic Category (1 to 5)	

Analysis Results (% Maximum Usage)

Existing/Reserved + Future + Proposed Condition	
Tower (%)	85.0%
Base Plate (%)	71.3%
Foundation (%)	54.3%
Foundation Adequate?	Yes

Steel Yield Strength (ksi)

Pole	65
Base Plate	60
Anchor Rods	75

Existing / Reserved Loading

Antenna		Mount			Transmission Line				
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External
City	150	156	1	Unknown	Omni	1	Unknown	1-1/4"	Internal
City	150	155	1	Unknown	Yagi		Unknown	1-1/4"	Internal
AT&T Mobility	150	151	3	Kathrein	Panel		Unknown	1-5/8"	Internal
AT&T Mobility	150	151	6	KMW	TMA		Unknown	3/4"	Internal
AT&T Mobility	150	151	6	ADC	TWA		Unknown	3/8"	Internal
AT&T Mobility	150	151	6	CCI	DTMABP7819VG12A		Unknown	3/8"	Internal
AT&T Mobility	150	151	12	Powerwave	Diplexer		Unknown		Internal
AT&T Mobility	150	151	3	Kathrein	RRU		Unknown		Internal
AT&T Mobility	150	151	6	Eriqsson	RRU-11		Unknown		Internal
AT&T Mobility	150	151	1	Raycap	DCS-48-60-18-8F		Unknown		Internal
Verizon	140	140	3	Powerwave	P65-15-XL-2		Unknown	1-5/8"	Internal
Verizon	140	140	3	Andrew	DB854-DG65ESX		Unknown		Internal
Verizon	140	140	3	Syma	MG DS-800TD		Unknown		Internal
Sprint	130.4	130.4	1	Decibel	DB800F90E-M		Unknown	1-5/8"	Internal
Sprint	130.4	130.4	1	Unknown	GPS		Unknown	1/2"	Internal
Metro PCS	120	120	6	Andrew	HBX-651BDS-VTM		Unknown	1-5/8"	External
Metro PCS	120	120	6	Andrew	ATM200-A20		Unknown	3/8"	External

Note: The existing GPS Unit at 130.4' shall be removed prior to the installation of the proposed loading. The remaining equipment shall be reused.

Proposed Loading

Antenna		Mount			Transmission Line				
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External
Sprint	130.4	130.4	3	RFS	Panel		Unknown	1-1/4"	Internal
Sprint	130.4	130.4	3	RRU	RRU		Unknown		Internal
Sprint	130.4	130.4	3	Alcatel Lucent	RRU		Unknown		Internal
Sprint	130.4	130.4	3	Andrew	Filter		Unknown		Internal
Sprint	130.4	130.4	1	Pctel	GPS		Unknown		Internal

Note: The proposed loading shall be in addition to the remaining existing loading.

Future Loading

Antenna		Mount			Transmission Line				
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External
AT&T Loading	150	151	3	Kathrein	Panel		Unknown	1-5/8"	Internal

Note: The future loading shall be in addition to the existing/reserved loading at the same elevation.

APPENDIX B

tnxTower Output File

tnxTower GPD Group 520 South Main Street, Suite 2531 Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	Job 61186 BETHANY	Page 1 of 9
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	Client AT&T Mobility	Designed by twillman

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 New Haven County, Connecticut.
- Basic wind speed of 85 mph.
- Nominal ice thickness of 0.7500 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 pcf.
- A wind speed of 38 mph is used in combination with ice.
- Temperature drop of 50 °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.

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	C _A A _A		Weight
						ft ² /ft	plf	
Step Pegs (AT&T)	C	No	CaAa (Out Of Face)	150.00 - 8.00	1	No Ice	0.00	2.72
						1/2" Ice	0.00	3.51
						1" Ice	0.00	4.92
						2" Ice	0.00	9.56
						4" Ice	0.00	26.18
Safety Line 3/8 (AT&T)	C	No	CaAa (Out Of Face)	150.00 - 8.00	1	No Ice	0.00	0.22
						1/2" Ice	0.00	0.75
						1" Ice	0.00	1.28
						2" Ice	0.00	2.34
						4" Ice	0.00	4.46
LDF7-50A (1-5/8 FOAM (AT&T)	C	No	Inside Pole	150.00 - 8.00	18	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
						2" Ice	0.00	0.82
						4" Ice	0.00	0.82
3/4" DC Power Line (AT&T)	C	No	Inside Pole	150.00 - 8.00	2	No Ice	0.00	0.33
						1/2" Ice	0.00	0.33
						1" Ice	0.00	0.33
						2" Ice	0.00	0.33
						4" Ice	0.00	0.33
3/8" Fiber Cable (AT&T)	C	No	Inside Pole	150.00 - 8.00	1	No Ice	0.00	0.10
						1/2" Ice	0.00	0.10
						1" Ice	0.00	0.10
						2" Ice	0.00	0.10
						4" Ice	0.00	0.10
RET Cable (AT&T)	C	No	Inside Pole	150.00 - 8.00	1	No Ice	0.00	0.08
						1/2" Ice	0.00	0.08
						1" Ice	0.00	0.08
						2" Ice	0.00	0.08
						4" Ice	0.00	0.08
LDF6-50A (1-1/4)	C	No	Inside Pole	150.00 - 8.00	2	No Ice	0.00	0.66

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	Client	AT&T Mobility	Designed by	twillman

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	C _A A _A	Weight	
							ft ² /ft	plf
FOAM (Unknown)							1/2" Ice	0.66
							1" Ice	0.66
							2" Ice	0.66
							4" Ice	0.66
LDF7-50A (1-5/8 FOAM) (Verizon)	B	No	Inside Pole	140.00 - 8.00	12		No Ice	0.82
							1/2" Ice	0.82
							1" Ice	0.82
							2" Ice	0.82
LDF7-50A (1-5/8 FOAM) (Sprint)	A	No	Inside Pole	130.40 - 8.00	6		4" Ice	0.82
							No Ice	0.82
							1/2" Ice	0.82
							1" Ice	0.82
1-1/4" Hybrid Cable (Sprint)	A	No	Inside Pole	130.40 - 8.00	3		2" Ice	0.82
							4" Ice	0.82
							No Ice	1.00
							1/2" Ice	1.00
LDF4-50A (1/2 FOAM) (Sprint)	A	No	Inside Pole	130.40 - 8.00	1		1" Ice	1.00
							2" Ice	1.00
							4" Ice	1.00
							No Ice	0.15
LDF7-50A (1-5/8 FOAM) (Metro PCS)	B	No	CaAa (Out Of Face)	120.00 - 8.00	1		1/2" Ice	0.15
							1" Ice	0.15
							2" Ice	0.15
							4" Ice	0.15
LDF7-50A (1-5/8 FOAM) (Metro Pcs)	B	No	CaAa (Out Of Face)	120.00 - 8.00	11		No Ice	0.20
							1/2" Ice	0.30
							1" Ice	0.40
							2" Ice	0.60
LDF2-50 (3/8 FOAM) (Metro Pcs)	C	No	CaAa (Out Of Face)	120.00 - 8.00	6		4" Ice	1.00
							No Ice	0.00
							1/2" Ice	0.00
							1" Ice	0.00
							10.54	
							30.04	
							0.82	
							2.33	
							4.46	
							10.54	
							30.04	
							0.08	
							0.65	
							1.84	
							6.04	
							21.78	

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement ft	C _A A _A Front	C _A A _A Side	Weight lb		
			Horz Lateral ft	Vert ft							
4' Lightning Rod	C	From Leg		0.00	0.0000	150.00			No Ice	0.10	108.0000
				0.00					1/2" Ice	0.51	109.8724
				2.00					1" Ice	0.89	114.3664
									2" Ice	1.41	131.8301
12' Omni	C	From Leg		4.00	0.0000	150.00			4" Ice	2.57	204.9367
				0.00					No Ice	3.00	20.0000
				6.00					1/2" Ice	4.23	42.3029
									1" Ice	5.47	72.3435
								2" Ice	7.69	156.2484	

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	Client		AT&T Mobility		Designed by		twillman	

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 lb	
10' Yagi	A	From Leg	4.00	0.0000	150.00	4" Ice	10.71	10.71	423.6292
			0.00			No Ice	2.00	2.00	50.0000
			5.00			1/2" Ice	3.02	3.02	65.5007
						1" Ice	4.07	4.07	87.4664
						2" Ice	5.70	5.70	151.4036
Sabre 12' LP Platform w/Rails (AT&T)	C	None		0.0000	150.00	4" Ice	8.26	8.26	363.5775
						No Ice	32.03	32.03	1343.3000
						1/2" Ice	38.71	38.71	1800.0900
						1" Ice	45.39	45.39	2256.8800
						2" Ice	58.75	58.75	3170.4600
(2) 800 10121 w/ Mount Pipe (AT&T)	A	From Leg	4.00	0.0000	150.00	4" Ice	85.47	85.47	4997.6200
			0.00			No Ice	5.47	4.34	62.7292
			1.00			1/2" Ice	5.89	4.97	105.9690
						1" Ice	6.33	5.61	158.0166
						2" Ice	7.23	6.98	282.8389
(2) 800 10121 w/ Mount Pipe (AT&T)	B	From Leg	4.00	0.0000	150.00	4" Ice	9.13	10.17	641.2364
			0.00			No Ice	5.47	4.34	62.7292
			1.00			1/2" Ice	5.89	4.97	105.9690
						1" Ice	6.33	5.61	158.0166
						2" Ice	7.23	6.98	282.8389
(2) 800 10121 w/ Mount Pipe (AT&T)	C	From Leg	4.00	0.0000	150.00	4" Ice	9.13	10.17	641.2364
			0.00			No Ice	5.47	4.34	62.7292
			1.00			1/2" Ice	5.89	4.97	105.9690
						1" Ice	6.33	5.61	158.0166
						2" Ice	7.23	6.98	282.8389
(2) AM-X-CD-16-65-00T-RET w/ 2" x 60" Mount Pipe (AT&T)	A	From Leg	4.00	0.0000	150.00	4" Ice	9.13	10.17	641.2364
			0.00			No Ice	6.73	5.32	51.2500
			1.00			1/2" Ice	7.20	6.03	103.9856
						1" Ice	7.68	6.76	166.0948
						2" Ice	8.66	8.26	312.1232
(2) AM-X-CD-16-65-00T-RET w/ 2" x 60" Mount Pipe (AT&T)	B	From Leg	4.00	0.0000	150.00	4" Ice	10.74	11.54	718.7285
			0.00			No Ice	6.73	5.32	51.2500
			1.00			1/2" Ice	7.20	6.03	103.9856
						1" Ice	7.68	6.76	166.0948
						2" Ice	8.66	8.26	312.1232
(2) AM-X-CD-16-65-00T-RET w/ 2" x 60" Mount Pipe (AT&T)	C	From Leg	4.00	0.0000	150.00	4" Ice	10.74	11.54	718.7285
			0.00			No Ice	6.73	5.32	51.2500
			1.00			1/2" Ice	7.20	6.03	103.9856
						1" Ice	7.68	6.76	166.0948
						2" Ice	8.66	8.26	312.1232
(2) CG1900DD (AT&T)	A	From Leg	4.00	0.0000	150.00	4" Ice	10.74	11.54	718.7285
			0.00			No Ice	0.00	0.32	10.0000
			1.00			1/2" Ice	0.00	0.42	19.3400
						1" Ice	0.00	0.52	28.4470
						2" Ice	0.00	0.76	53.0380
(2) CG1900DD (AT&T)	B	From Leg	4.00	0.0000	150.00	4" Ice	0.00	1.35	133.1770
			0.00			No Ice	0.00	0.32	10.0000
			1.00			1/2" Ice	0.00	0.42	19.3400
						1" Ice	0.00	0.52	28.4470
						2" Ice	0.00	0.76	53.0380
(2) CG1900DD (AT&T)	C	From Leg	4.00	0.0000	150.00	4" Ice	0.00	1.35	133.1770
			0.00			No Ice	0.00	0.32	10.0000
			1.00			1/2" Ice	0.00	0.42	19.3400
						1" Ice	0.00	0.52	28.4470
						2" Ice	0.00	0.76	53.0380
(2) DTMABP7819VG12A	A	From Leg	4.00	0.0000	150.00	4" Ice	0.00	1.35	133.1770
						No Ice	0.00	0.44	20.0000

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _A A _{Front} ft ²	C _A A _{Side} ft ²	Weight lb	
(AT&T)			0.00 1.00		1/2" Ice 1" Ice	0.00 0.00	0.56 0.69	26.1190 35.1100	
(2) DTMABP7819VG12A (AT&T)	B	From Leg	4.00 0.00 1.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.44 0.56 0.69 0.97 1.63	20.0000 26.1190 35.1100 59.4910 139.2860
(2) DTMABP7819VG12A (AT&T)	C	From Leg	4.00 0.00 1.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.44 0.56 0.69 0.97 1.63	20.0000 26.1190 35.1100 59.4910 139.2860
(4) LGP21901 (AT&T)	A	From Leg	4.00 0.00 1.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.18 0.25 0.32 0.49 0.94	5.5000 7.9150 11.4120 22.4320 66.0160
(4) LGP21901 (AT&T)	B	From Leg	4.00 0.00 1.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.18 0.25 0.32 0.49 0.94	5.5000 7.9150 11.4120 22.4320 66.0160
(4) LGP21901 (AT&T)	C	From Leg	4.00 0.00 1.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.18 0.25 0.32 0.49 0.94	5.5000 7.9150 11.4120 22.4320 66.0160
(2) RRUS 11 (AT&T)	A	From Leg	4.00 0.00 1.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.94 3.17 3.41 3.91 5.02	1.25 1.41 1.59 1.96 2.82	55.0000 74.3200 96.5567 150.5578 302.1156
(2) RRUS 11 (AT&T)	B	From Leg	4.00 0.00 1.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.94 3.17 3.41 3.91 5.02	1.25 1.41 1.59 1.96 2.82	55.0000 74.3200 96.5567 150.5578 302.1156
(2) RRUS 11 (AT&T)	C	From Leg	4.00 0.00 1.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.94 3.17 3.41 3.91 5.02	1.25 1.41 1.59 1.96 2.82	55.0000 74.3200 96.5567 150.5578 302.1156
DC6-48-60-18-8F Surge Suppression Unit (AT&T)	C	From Leg	4.00 0.00 1.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.47 1.67 1.88 2.33 3.38	1.47 1.67 1.88 2.33 3.38	32.8000 50.5151 70.7246 119.2374 252.9151
860 10025 (AT&T)	A	From Leg	4.00 0.00 1.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.18 0.25 0.33 0.51 0.98	0.15 0.21 0.29 0.47 0.93	1.2000 2.8531 5.4829 14.4506 52.6628
860 10025 (AT&T)	B	From Leg	4.00 0.00 1.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	0.18 0.25 0.33	0.15 0.21 0.29	1.2000 2.8531 5.4829

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _A A _{Front} ft ²	C _A A _{Side} ft ²	Weight lb	
860 10025 (AT&T)	C	From Leg	4.00 0.00 1.00	0.0000	150.00	2" Ice	0.51	0.47	14.4506
						4" Ice	0.98	0.93	52.6628
						No Ice	0.18	0.15	1.2000
						1/2" Ice	0.25	0.21	2.8531
						1" Ice	0.33	0.29	5.4829
MTS 12.5' LP Platform (Verizon)	C	None		0.0000	140.00	2" Ice	0.51	0.47	14.4506
						4" Ice	0.98	0.93	52.6628
						No Ice	14.66	14.66	1250.0000
						1/2" Ice	18.87	18.87	1481.3300
						1" Ice	23.08	23.08	1712.6600
P65-15-XL-2D w/ Mount Pipe (Verizon)	A	From Leg	4.00 0.00 0.00	0.0000	140.00	2" Ice	31.50	31.50	2175.3200
						4" Ice	48.34	48.34	3100.6400
						No Ice	5.64	3.40	48.2083
						1/2" Ice	6.04	3.95	88.1509
						1" Ice	6.45	4.53	136.2105
P65-15-XL-2D w/ Mount Pipe (Verizon)	B	From Leg	4.00 0.00 0.00	0.0000	140.00	2" Ice	7.30	5.77	251.5985
						4" Ice	9.12	8.70	583.8306
						No Ice	5.64	3.40	48.2083
						1/2" Ice	6.04	3.95	88.1509
						1" Ice	6.45	4.53	136.2105
P65-15-XL-2D w/ Mount Pipe (Verizon)	C	From Leg	4.00 0.00 0.00	0.0000	140.00	2" Ice	7.30	5.77	251.5985
						4" Ice	9.12	8.70	583.8306
						No Ice	5.64	3.40	48.2083
						1/2" Ice	6.04	3.95	88.1509
						1" Ice	6.45	4.53	136.2105
DB854DG65ESX w/ Mount Pipe (Verizon)	A	From Leg	4.00 0.00 0.00	0.0000	140.00	2" Ice	7.30	5.77	251.5985
						4" Ice	9.12	8.70	583.8306
						No Ice	6.07	3.86	40.0000
						1/2" Ice	6.53	4.48	80.4030
						1" Ice	7.00	5.10	132.8810
DB854DG65ESX w/ Mount Pipe (Verizon)	B	From Leg	4.00 0.00 0.00	0.0000	140.00	2" Ice	7.96	6.48	257.9990
						4" Ice	10.03	9.54	616.1970
						No Ice	6.07	3.86	40.0000
						1/2" Ice	6.53	4.48	80.4030
						1" Ice	7.00	5.10	132.8810
DB854DG65ESX w/ Mount Pipe (Verizon)	C	From Leg	4.00 0.00 0.00	0.0000	140.00	2" Ice	7.96	6.48	257.9990
						4" Ice	10.03	9.54	616.1970
						No Ice	6.07	3.86	40.0000
						1/2" Ice	6.53	4.48	80.4030
						1" Ice	7.00	5.10	132.8810
MG D3-800TO w/ Mount Pipe (Verizon)	A	From Leg	4.00 0.00 0.00	0.0000	140.00	2" Ice	7.96	6.48	257.9990
						4" Ice	10.03	9.54	616.1970
						No Ice	3.59	3.74	58.0267
						1/2" Ice	3.98	4.38	97.7472
						1" Ice	4.39	5.04	141.7585
MG D3-800TO w/ Mount Pipe (Verizon)	B	From Leg	4.00 0.00 0.00	0.0000	140.00	2" Ice	5.33	6.42	253.6454
						4" Ice	7.35	9.52	578.2190
						No Ice	3.59	3.74	58.0267
						1/2" Ice	3.98	4.38	97.7472
						1" Ice	4.39	5.04	141.7585
MG D3-800TO w/ Mount Pipe (Verizon)	C	From Leg	4.00 0.00 0.00	0.0000	140.00	2" Ice	5.33	6.42	253.6454
						4" Ice	7.35	9.52	578.2190
						No Ice	3.59	3.74	58.0267
						1/2" Ice	3.98	4.38	97.7472
						1" Ice	4.39	5.04	141.7585
						2" Ice	5.33	6.42	253.6454
						4" Ice	7.35	9.52	578.2190
						No Ice	3.59	3.74	58.0267
						1/2" Ice	3.98	4.38	97.7472

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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 ₂ Side ft ²	Weight lb	
12' T-Arm - Round (GPD) (Sprint)	A	From Leg	1.73	30.0000	130.40	No Ice	4.70	2.33	333.0000
			1.00			1/2" Ice	5.33	2.96	400.0000
			0.00			1" Ice	6.00	3.60	467.0000
						2" Ice	6.67	4.87	533.0000
						4" Ice	8.33	7.41	600.0000
12' T-Arm - Round (GPD) (Sprint)	B	From Leg	1.73	30.0000	130.40	No Ice	4.70	2.33	333.0000
			1.00			1/2" Ice	5.33	2.96	400.0000
			0.00			1" Ice	6.00	3.60	467.0000
						2" Ice	6.67	4.87	533.0000
						4" Ice	8.33	7.41	600.0000
12' T-Arm - Round (GPD) (Sprint)	C	From Leg	1.73	30.0000	130.40	No Ice	4.70	2.33	333.0000
			1.00			1/2" Ice	5.33	2.96	400.0000
			0.00			1" Ice	6.00	3.60	467.0000
						2" Ice	6.67	4.87	533.0000
						4" Ice	8.33	7.41	600.0000
(2) DB980F90E-M w/Mount Pipe (Sprint)	A	From Leg	3.46	30.0000	130.40	No Ice	4.37	3.95	34.0500
			2.00			1/2" Ice	4.96	5.04	70.6914
			0.00			1" Ice	5.47	5.85	117.9136
						2" Ice	6.52	7.49	234.8427
						4" Ice	8.98	10.98	592.9727
(2) DB980F90E-M w/Mount Pipe (Sprint)	B	From Leg	3.46	30.0000	130.40	No Ice	4.37	3.95	34.0500
			2.00			1/2" Ice	4.96	5.04	70.6914
			0.00			1" Ice	5.47	5.85	117.9136
						2" Ice	6.52	7.49	234.8427
						4" Ice	8.98	10.98	592.9727
(2) DB980F90E-M w/Mount Pipe (Sprint)	C	From Leg	3.46	30.0000	130.40	No Ice	4.37	3.95	34.0500
			2.00			1/2" Ice	4.96	5.04	70.6914
			0.00			1" Ice	5.47	5.85	117.9136
						2" Ice	6.52	7.49	234.8427
						4" Ice	8.98	10.98	592.9727
APXVSP18-C-A20 w/ Mount Pipe (Sprint)	A	From Leg	3.46	10.0000	130.40	No Ice	8.26	6.71	78.9000
			2.00			1/2" Ice	8.81	7.66	141.8791
			0.00			1" Ice	9.36	8.49	216.0613
						2" Ice	10.50	10.20	390.2510
						4" Ice	12.88	13.98	872.7522
APXVSP18-C-A20 w/ Mount Pipe (Sprint)	B	From Leg	3.46	30.0000	130.40	No Ice	8.26	6.71	78.9000
			2.00			1/2" Ice	8.81	7.66	141.8791
			0.00			1" Ice	9.36	8.49	216.0613
						2" Ice	10.50	10.20	390.2510
						4" Ice	12.88	13.98	872.7522
APXVSP18-C-A20 w/ Mount Pipe (Sprint)	C	From Leg	3.46	10.0000	130.40	No Ice	8.26	6.71	78.9000
			2.00			1/2" Ice	8.81	7.66	141.8791
			0.00			1" Ice	9.36	8.49	216.0613
						2" Ice	10.50	10.20	390.2510
						4" Ice	12.88	13.98	872.7522
800 MHz RRU (Sprint)	A	From Leg	3.46	10.0000	130.40	No Ice	2.40	1.59	53.0000
			2.00			1/2" Ice	2.61	1.77	71.2713
			0.00			1" Ice	2.83	1.96	92.3685
						2" Ice	3.30	2.37	143.8185
						4" Ice	4.34	3.30	289.1852
800 MHz RRU (Sprint)	B	From Leg	3.46	30.0000	130.40	No Ice	2.40	1.59	53.0000
			2.00			1/2" Ice	2.61	1.77	71.2713
			0.00			1" Ice	2.83	1.96	92.3685
						2" Ice	3.30	2.37	143.8185
						4" Ice	4.34	3.30	289.1852
800 MHz RRU (Sprint)	C	From Leg	3.46	10.0000	130.40	No Ice	2.40	1.59	53.0000
			2.00			1/2" Ice	2.61	1.77	71.2713

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _A A ₁ Front	C _A A ₂ Side	Weight	
			Horz	Lateral						Vert
			ft	ft	°	ft	ft ²	ft ²	lb	
			0.00			1" Ice	2.83	1.96	92.3685	
						2" Ice	3.30	2.37	143.8185	
						4" Ice	4.34	3.30	289.1852	
800 External Notch Filter (Sprint)	A	From Leg	3.46		10.0000	130.40	No Ice	0.77	0.37	11.0000
			2.00				1/2" Ice	0.89	0.46	16.8143
			0.00				1" Ice	1.02	0.56	24.2575
							2" Ice	1.30	0.79	44.8079
							4" Ice	1.97	1.34	114.0099
800 External Notch Filter (Sprint)	B	From Leg	3.46		30.0000	130.40	No Ice	0.77	0.37	11.0000
			2.00				1/2" Ice	0.89	0.46	16.8143
			0.00				1" Ice	1.02	0.56	24.2575
							2" Ice	1.30	0.79	44.8079
							4" Ice	1.97	1.34	114.0099
800 External Notch Filter (Sprint)	C	From Leg	3.46		10.0000	130.40	No Ice	0.77	0.37	11.0000
			2.00				1/2" Ice	0.89	0.46	16.8143
			0.00				1" Ice	1.02	0.56	24.2575
							2" Ice	1.30	0.79	44.8079
							4" Ice	1.97	1.34	114.0099
1900 MHz RRU (Sprint)	A	From Leg	3.46		10.0000	130.40	No Ice	2.78	1.50	44.0000
			2.00				1/2" Ice	3.01	1.69	62.6019
			0.00				1" Ice	3.25	1.89	84.1204
							2" Ice	3.76	2.32	136.6852
							4" Ice	4.87	3.28	285.3704
1900 MHz RRU (Sprint)	B	From Leg	3.46		30.0000	130.40	No Ice	2.78	1.50	44.0000
			2.00				1/2" Ice	3.01	1.69	62.6019
			0.00				1" Ice	3.25	1.89	84.1204
							2" Ice	3.76	2.32	136.6852
							4" Ice	4.87	3.28	285.3704
1900 MHz RRU (Sprint)	C	From Leg	3.46		10.0000	130.40	No Ice	2.78	1.50	44.0000
			2.00				1/2" Ice	3.01	1.69	62.6019
			0.00				1" Ice	3.25	1.89	84.1204
							2" Ice	3.76	2.32	136.6852
							4" Ice	4.87	3.28	285.3704
GPS-TMG-HR-26N (Sprint)	C	From Leg	3.46		0.0000	130.40	No Ice	0.16	0.16	0.6000
			2.00				1/2" Ice	0.21	0.21	2.3707
			0.00				1" Ice	0.28	0.28	5.0748
							2" Ice	0.44	0.44	14.0607
							4" Ice	0.86	0.86	51.7881
Kenwood 5' Standoff (Metro PCS)	A	From Leg	1.00		0.0000	120.00	No Ice	5.70	0.60	78.0000
			0.00				1/2" Ice	7.00	0.90	106.0000
			0.00				1" Ice	8.30	1.20	134.0000
							2" Ice	10.90	1.80	190.0000
							4" Ice	16.10	3.00	302.0000
Kenwood 5' Standoff (Metro PCS)	B	From Leg	1.00		0.0000	120.00	No Ice	5.70	0.60	78.0000
			0.00				1/2" Ice	7.00	0.90	106.0000
			0.00				1" Ice	8.30	1.20	134.0000
							2" Ice	10.90	1.80	190.0000
							4" Ice	16.10	3.00	302.0000
Kenwood 5' Standoff (Metro PCS)	C	From Leg	1.00		0.0000	120.00	No Ice	5.70	0.60	78.0000
			0.00				1/2" Ice	7.00	0.90	106.0000
			0.00				1" Ice	8.30	1.20	134.0000
							2" Ice	10.90	1.80	190.0000
							4" Ice	16.10	3.00	302.0000
(2) HBX-6516DS-VTM w/ mount pipe (Metro PCS)	A	From Leg	2.00		0.0000	120.00	No Ice	3.53	3.17	28.1500
			0.00				1/2" Ice	3.91	3.80	58.6194
			0.00				1" Ice	4.33	4.43	97.6088
							2" Ice	5.22	5.75	194.8366

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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 lb	
(2) HBX-6516DS-VTM w/ mount pipe (Metro PCS)	B	From Leg	2.00 0.00 0.00	0.0000	120.00	4" Ice	7.14	8.68	493.5976
						No Ice	3.53	3.17	28.1500
						1/2" Ice	3.91	3.80	58.6194
						1" Ice	4.33	4.43	97.6088
						2" Ice	5.22	5.75	194.8366
(2) HBX-6516DS-VTM w/ mount pipe (Metro PCS)	C	From Leg	2.00 0.00 0.00	0.0000	120.00	4" Ice	7.14	8.68	493.5976
						No Ice	3.53	3.17	28.1500
						1/2" Ice	3.91	3.80	58.6194
						1" Ice	4.33	4.43	97.6088
						2" Ice	5.22	5.75	194.8366
(2) ATM200-A20 (Metro PCS)	A	From Leg	2.00 0.00 0.00	0.0000	120.00	4" Ice	7.14	8.68	493.5976
						No Ice	0.12	0.12	0.5300
						1/2" Ice	0.19	0.19	2.2280
						1" Ice	0.27	0.27	4.7711
						2" Ice	0.45	0.45	13.0031
(2) ATM200-A20 (Metro PCS)	B	From Leg	2.00 0.00 0.00	0.0000	120.00	4" Ice	0.96	0.96	46.3271
						No Ice	0.12	0.12	0.5300
						1/2" Ice	0.19	0.19	2.2280
						1" Ice	0.27	0.27	4.7711
						2" Ice	0.45	0.45	13.0031
(2) ATM200-A20 (Metro PCS)	C	From Leg	2.00 0.00 0.00	0.0000	120.00	4" Ice	0.96	0.96	46.3271
						No Ice	0.12	0.12	0.5300
						1/2" Ice	0.19	0.19	2.2280
						1" Ice	0.27	0.27	4.7711
						2" Ice	0.45	0.45	13.0031
						4" Ice	0.96	0.96	46.3271

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	4' Lightning Rod	33	33.508	2.1634	0.0057	11536
140.00	MTS 12.5' LP Platform	33	29.045	2.0482	0.0037	5768
130.40	12' T-Arm - Round (GPD)	33	24.952	1.9181	0.0022	2942
120.00	Kenwood 5' Standoff	33	20.930	1.7458	0.0014	4102

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SF*P _{allow} lb	% Capacity	Pass Fail
L1	150 - 125	Pole	TP22.2899x17.61x0.2188	1	-6828.8301	59632.1535	*	Pass
L2	125 - 120	Pole	TP23.2259x22.2899x0.3575	2	-7456.9800	108395.160	*	Pass
L3	120 - 115	Pole	TP24.1619x23.2259x0.6352	3	-8708.6797	209710.217	*	Pass
L4	115 - 96.58	Pole	TP27.61x24.1619x0.4601	4	-11130.9004	212758.788	*	Pass
L5	96.58 - 90	Pole	TP28.4001x26.3451x0.5419	5	-13940.7998	297048.373	*	Pass
L6	90 - 60	Pole	TP34.0047x28.4001x0.5689	6	-21181.0000	539169.151	*	Pass

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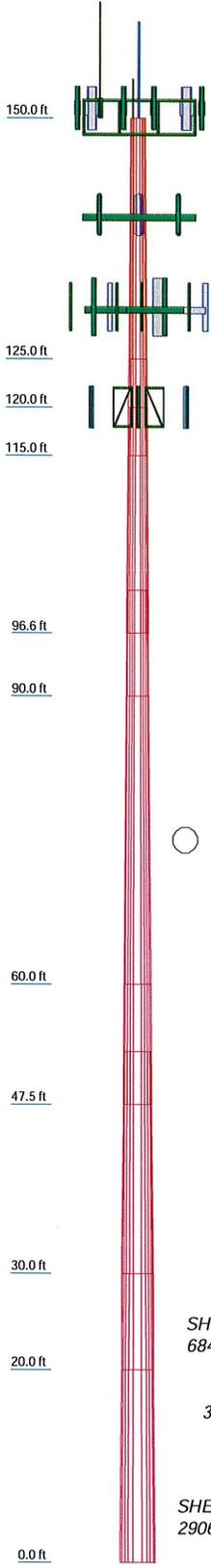
Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SF*P _{allow} lb	% Capacity	Pass Fail
L7	60 - 47.5	Pole	TP36.34x34.0047x0.6377	7	-23182.5996	674111.402	*	Pass
L8	47.5 - 30	Pole	TP38.9891x34.6875x0.6664	8	-31650.3008	950994.152	*	Pass
L9	30 - 20	Pole	TP40.8594x38.9891x0.6506	9	-34985.6992	1072305.14	*	Pass
L10	20 - 0	Pole	TP44.6x40.8594x0.7707	10	-42118.8008	1645175.20	*	Pass
						Summary	ELC:	Existing + Proposed + Future
						Pole (L6) Rating =	85.0*	Pass
							85.0*	Pass

* See Appendix D for the tower modification capacities

APPENDIX C

Tower Elevation Drawing

Section	1	2	3	4	5	6	7	8	9	10
Length (ft)	25.00	5.00	5.00	18.42	11.00	30.00	12.50	23.00	10.00	20.00
Number of Sides	12	12	12	12	12	12	12	12	12	12
Thickness (in)	0.2188	0.6352	0.3575	0.4601	0.5419	0.5689	0.6377	0.6664	0.6506	0.7707
Socket Length (ft)				4.42			5.50			
Top Dia (in)	17.6100	23.2259	22.2899	24.1619	26.3451	28.4001	34.0047	34.6875	38.9891	40.8594
Bot Dia (in)	22.2899	24.1619	23.2259	27.6100	28.4001	34.0047	36.3400	38.9891	40.8594	44.6000
Grade	A572-65	50.16504ksi	52.383319ksi	50.587672ksi	50.838807ksi	51.993535ksi	53.848939ksi	54.166693ksi	54.393889ksi	60.698034ksi
Weight (lb)	1182.3	726.5	415.2	2219.1	1664.0	5440.0	2837.4	5787.2	2678.7	6237.1



DESIGNED APPURTENANCE LOADING

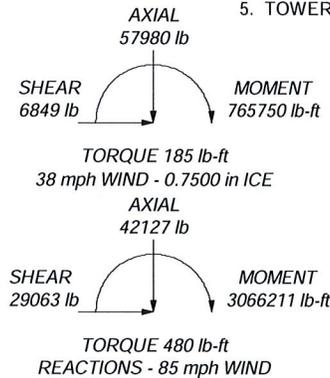
TYPE	ELEVATION	TYPE	ELEVATION
4' Lightning Rod	150	MG D3-800TO w/ Mount Pipe (Verizon)	140
12' Omni	150	MG D3-800TO w/ Mount Pipe (Verizon)	140
10' Yagi	150	MG D3-800TO w/ Mount Pipe (Verizon)	140
Sabre 12' LP Platform w/Rails (ATI)	150	12' T-Arm - Round (GPD) (Sprint)	130.4
(2) 800 10121 w/ Mount Pipe (ATI)	150	12' T-Arm - Round (GPD) (Sprint)	130.4
(2) 800 10121 w/ Mount Pipe (ATI)	150	12' T-Arm - Round (GPD) (Sprint)	130.4
(2) 800 10121 w/ Mount Pipe (ATI)	150	(2) DB980F90E-M w/Mount Pipe (Sprint)	130.4
(2) AM-X-CD-16-65-00T-RET w/ 2" x 60" Mount Pipe (ATI)	150	(2) DB980F90E-M w/Mount Pipe (Sprint)	130.4
(2) AM-X-CD-16-65-00T-RET w/ 2" x 60" Mount Pipe (ATI)	150	(2) DB980F90E-M w/Mount Pipe (Sprint)	130.4
(2) AM-X-CD-16-65-00T-RET w/ 2" x 60" Mount Pipe (ATI)	150	APXVSP18-C-A20 w/ Mount Pipe (Sprint)	130.4
(2) CG1900DD (ATI)	150	APXVSP18-C-A20 w/ Mount Pipe (Sprint)	130.4
(2) CG1900DD (ATI)	150	APXVSP18-C-A20 w/ Mount Pipe (Sprint)	130.4
(2) DTMABP7819VG12A (ATI)	150	APXVSP18-C-A20 w/ Mount Pipe (Sprint)	130.4
(2) DTMABP7819VG12A (ATI)	150	800 MHz RRU (Sprint)	130.4
(2) DTMABP7819VG12A (ATI)	150	800 MHz RRU (Sprint)	130.4
(4) LGP21901 (ATI)	150	800 MHz RRU (Sprint)	130.4
(4) LGP21901 (ATI)	150	800 External Notch Filter (Sprint)	130.4
(4) LGP21901 (ATI)	150	800 External Notch Filter (Sprint)	130.4
(2) RRUS 11 (ATI)	150	800 External Notch Filter (Sprint)	130.4
(2) RRUS 11 (ATI)	150	800 External Notch Filter (Sprint)	130.4
(2) RRUS 11 (ATI)	150	1900 MHz RRU (Sprint)	130.4
(2) RRUS 11 (ATI)	150	1900 MHz RRU (Sprint)	130.4
DC6-48-60-18-8F Surge Suppression Unit (ATI)	150	1900 MHz RRU (Sprint)	130.4
860 10025 (ATI)	150	GPS-TMG-HR-26N (Sprint)	130.4
860 10025 (ATI)	150	Kenwood 5' Standoff (Metro PCS)	120
860 10025 (ATI)	150	Kenwood 5' Standoff (Metro PCS)	120
MTS 12.5' LP Platform (Verizon)	140	Kenwood 5' Standoff (Metro PCS)	120
P65-15-XL-2D w/ Mount Pipe (Verizon)	140	(2) HBX-6516DS-VTM w/ mount pipe (Metro PCS)	120
P65-15-XL-2D w/ Mount Pipe (Verizon)	140	(2) HBX-6516DS-VTM w/ mount pipe (Metro PCS)	120
P65-15-XL-2D w/ Mount Pipe (Verizon)	140	(2) HBX-6516DS-VTM w/ mount pipe (Metro PCS)	120
DB854DG65ESX w/ Mount Pipe (Verizon)	140	(2) HBX-6516DS-VTM w/ mount pipe (Metro PCS)	120
DB854DG65ESX w/ Mount Pipe (Verizon)	140	(2) ATM200-A20 (Metro PCS)	120
DB854DG65ESX w/ Mount Pipe (Verizon)	140	(2) ATM200-A20 (Metro PCS)	120
DB854DG65ESX w/ Mount Pipe (Verizon)	140	(2) ATM200-A20 (Metro PCS)	120

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi	51.993535ksi	52 ksi	67 ksi
52.383319ksi	52 ksi	67 ksi	53.848939ksi	54 ksi	69 ksi
50.16504ksi	50 ksi	65 ksi	54.166893ksi	54 ksi	69 ksi
50.587672ksi	51 ksi	66 ksi	54.393889ksi	54 ksi	69 ksi
50.838807ksi	51 ksi	66 ksi	60.698034ksi	61 ksi	76 ksi

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 85.0%

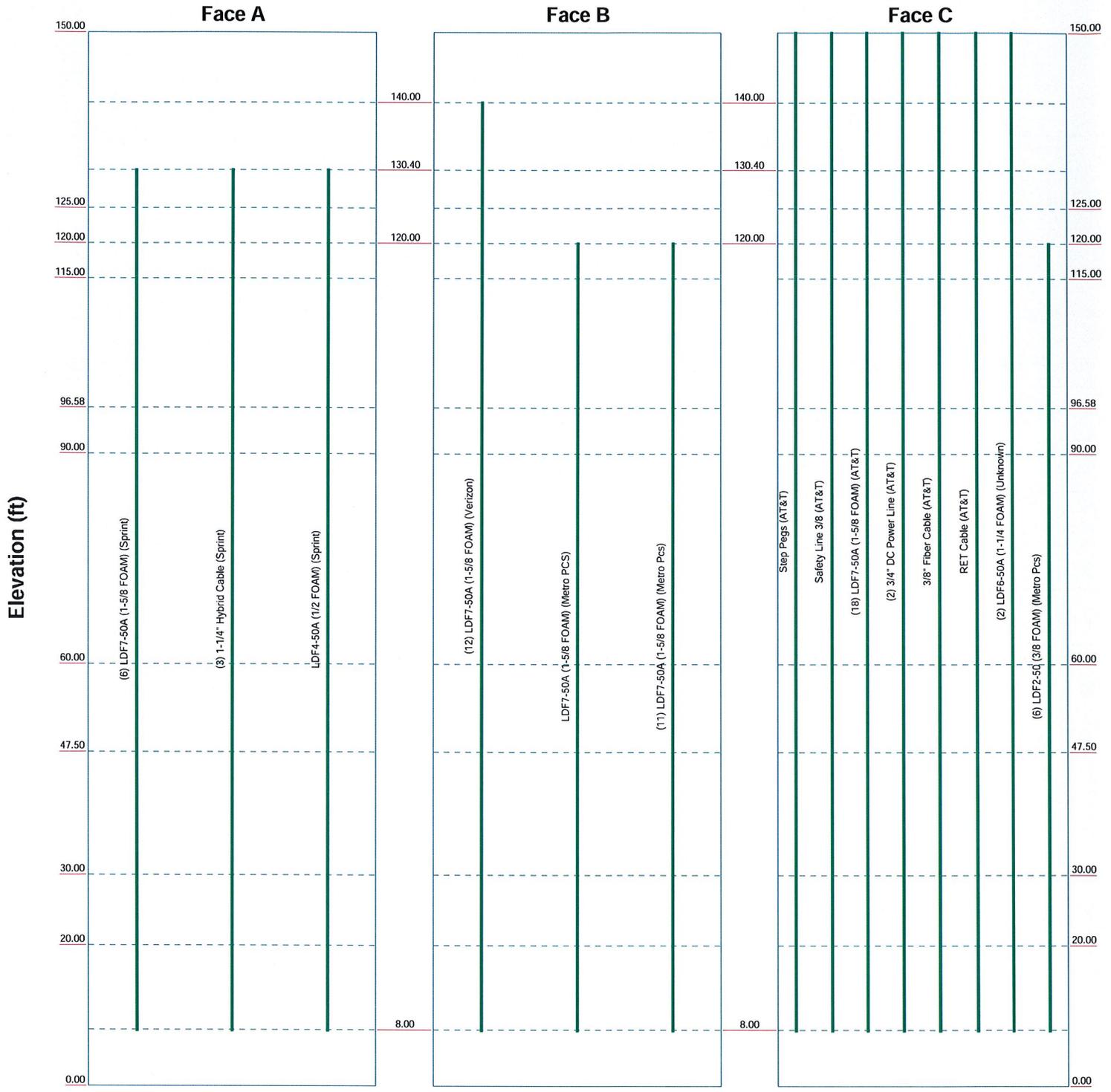


 GPD Group 520 South Main Street, Suite 2531 Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	Job: 61186 BETHANY Project: 2013723.61186.01		
	Client: AT&T Mobility Code: TIA/EIA-222-F Path:	Drawn by: twillman Date: 02/01/13	App'd: Scale: NTS Dwg No. E-1

Feedline Distribution Chart

0' - 150'

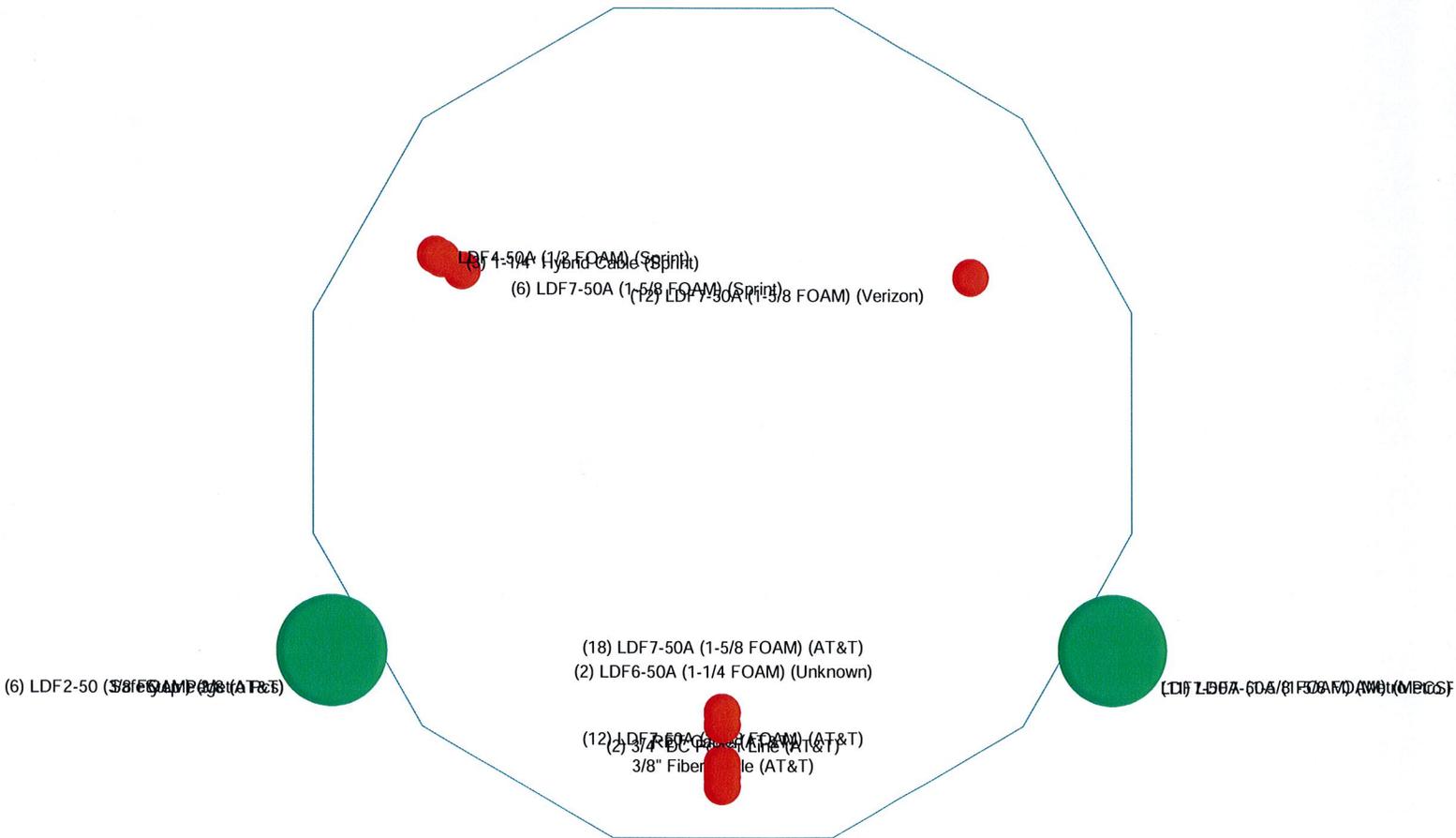
— Round
 — Flat
 — App In Face
 — App Out Face
 — Truss Leg



 GPD GROUP	GPD Group		
	520 South Main Street, Suite 2531		
	Akron, OH 44311		
	Phone: (330) 572-2100 FAX: (330) 572-2101		
Job: 61186 BETHANY			
Project: 2013723.61186.01			
Client: AT&T Mobility	Drawn by: twillman	App'd:	
Code: TIA/EIA-222-F	Date: 02/01/13	Scale: NTS	
Path:		Dwg No. E-7	

Feedline Plan

Round _____ Flat _____ App In Face _____ App Out Face _____



 <p>GPD Group 520 South Main Street, Suite 2531 Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2101</p>	Job: 61186 BETHANY		
	Project: 2013723.61186.01		
	Client: AT&T Mobility	Drawn by: twillman	App'd:
	Code: TIA/EIA-222-F	Date: 02/01/13	Scale: NTS
	Path:	Dwg No. E-7	

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APPENDIX D

Pole Reinforcement Calculations

APPENDIX E

Anchor Rod & Base Plate Calculations



Anchor Rod and Base Plate Stresses
61186 BETHANY
2013723.61186.01

*Overturning Moment =	2034.50 k*ft
Axial Force =	42.13 k
Shear Force =	29.06 k

Acceptable Stress Ratio	=	105.0%
-------------------------	---	--------

*Above reactions have been adjusted due to consideration of modifications. See attached hand calculations for determination of anchor rod forces used in the analysis below.

Anchor Rods	
Number of Rods =	12
Type =	Upset Rod
Rod Yield Strength (F _y) =	75 ksi
ASIF =	1.333
Rod Circle =	52.68 in
Rod Diameter =	2.25 in
Net Tensile Area =	3.25 in ²
Max Tension on Rod =	150.83 kips
Max Compression on Rod =	157.85 kips
Allow. Rod Force =	195.00 kips
Anchor Rod Capacity =	77.3% OK

Base Plate	
Location =	External
Plate Strength (F _y) =	60 ksi
Outside Diameter =	58.67 in
Plate Thickness =	2.75 in
w _{calc} =	28.04 in
w _{max} =	41.13 in
w =	28.04 in
S =	35.34 in ³
fb =	27.14 ksi
Fb =	60 ksi
BP Capacity =	45.2% OK

Stiffeners	
Configuration =	None

Pole	
Pole Diameter =	44.6 in
Number of Sides =	12
Thickness =	0.375 in
Pole Yield Strength =	65 ksi

M=		3066.211 k-ft		P=		42.127 k			
Bolt ϕ	D from Centroid (in)	Quantity of Bolts	Area (in ²)	Unbraced Length (in)	Bolt Force	Tension	Compression		
2.25	D ₁	N ₁	A ₁	L ₁	P ₁ *	151.00	157.84	P ₁	155.21
2.25	D ₂	N ₂	A ₂	L ₂	P ₁ *	145.71	152.56	P ₂	149.92
2.25	D ₃	N ₃	A ₃	L ₃	P ₁ *	130.20	137.05	P ₃	134.42
2.25	D ₄	N ₄	A ₄	L ₄	P ₁ *	105.54	112.38	P ₄	109.75
2.25	D ₅	N ₅	A ₅	L ₅	P ₁ *	73.39	80.24	P ₅	77.61
2.25	D ₆	N ₆	A ₆	L ₆	P ₁ *	35.96	42.80	P ₆	40.17
2.25	D ₇	N ₇	A ₇	L ₇	P ₁ *			P ₇	
					P ₁ *total			237.06	

M=		3066.211 k-ft		P=		42.127 k			
Bolt ϕ	D from Centroid (in)	Quantity of Bolts	Area (in ²)	Unbraced Length (in)	Bolt Force	Tension	Compression		
2.25	D ₁	N ₁	A ₁	L ₁	P ₁ *	152.87	157.55	P ₁	155.21
2.25	D ₂	N ₂	A ₂	L ₂	P ₁ *	147.58	152.26	P ₂	149.92
2.25	D ₃	N ₃	A ₃	L ₃	P ₁ *	107.41	112.09	P ₃	109.75
2.25	D ₄	N ₄	A ₄	L ₄	P ₁ *	75.27	79.95	P ₄	77.61
2.25	D ₅	N ₅	A ₅	L ₅	P ₁ *	37.83	42.51	P ₅	40.17
2.25	D ₆	N ₆	A ₆	L ₆	P ₁ *			P ₆	
2.25	D ₇	N ₇	A ₇	L ₇	P ₁ *			P ₇	
2.25	D ₈	N ₈	A ₈	L ₈	P ₁ *			P ₈	
					P ₁ *total			237.06	

APPENDIX F

Foundation Calculations



Mat Foundation Analysis
61186 BETHANY
2013723.61186.01

General Info	
Code	TIA/EIA-222-F (ASD)
Bearing On	Soil
Foundation Type	Mono Pad
Pier Type	Square
Reinforcing Known	No
Max Capacity	1.05

Tower Reactions	
Moment, M	3066.211 k-ft
Axial, P	42.127 k
Shear, V	29.063 k

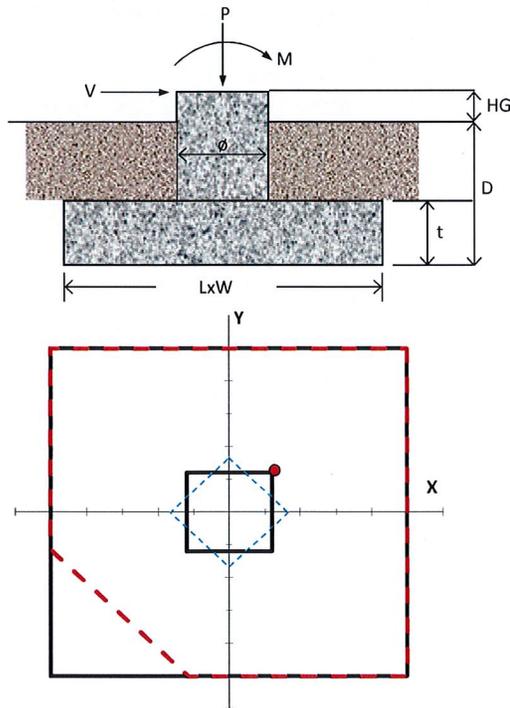
Pad & Pier Geometry		
Pier Width, ϕ	6	ft
Pad Length, L	25	ft
Pad Width, W	25	ft
Pad Thickness, t	6	ft
Depth, D	7.5	ft
Height Above Grade, HG	0.5	ft

Pad & Pier Reinforcing		
Rebar Fy	60	ksi
Concrete Fc'	3	ksi
Clear Cover	3	in
Reinforced Top & Bottom?	Yes	
Pad Reinforcing Size	# 7	
Pad Quantity Per Layer	10	
Pier Rebar Size	# 8	
Pier Quantity of Rebar	10	

Soil Properties	
Soil Type	Granular
Soil Unit Weight	110 pcf
Angle of Friction, ϕ	38 °
Bearing Type	Net
Ultimate Bearing	15 ksf
Water Table Depth	20 ft
Frost Depth	3 ft

Bearing Summary			Load Case
Qxmax	2.38	ksf	1D+1W
Qymax	2.38	ksf	1D+1W
Qmax @ 45°	2.95	ksf	1D+1W
Q _{(all) Gross}	7.91	ksf	
Controlling Capacity	37.3%	Pass	

Overturning Summary (Required FS=1.5)			Load Case
FS(ot)x	2.76	≥1.5	1D+1W
FS(ot)y	2.76	≥1.5	1D+1W
Controlling Capacity	54.3%	Pass	



SHEET INDEX

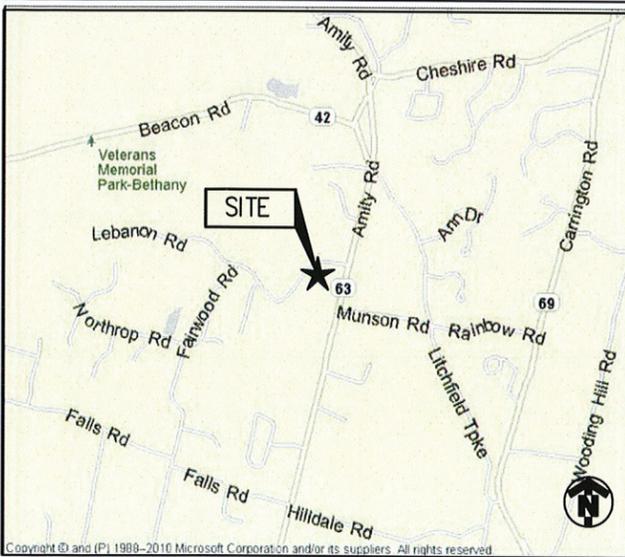
NO.	DESCRIPTION
T1	TITLE SHEET
AAV1	OVERALL AND ENLARGED SITE PLANS
AAV2	NOTES AND DETAILS
C1	GENERAL NOTES
C2	COMPOUND SITE PLAN
C3	EQUIPMENT SITE PLANS
C4	SITE ELEVATION AND ANTENNA/RRH DETAILS
C5	ANTENNA PLANS
C6	ANTENNA CABLE RISER AND H-FRAME DETAILS
C7	RF AND CABLE DETAILS
C8	JUNCTION BOX DETAILS
C9	DETAILS
E1	UTILITY SITE PLAN
E2	ONE-LINE DIAGRAMS AND DETAILS
E3	GROUNDING PLAN AND DETAILS

DRIVING DIRECTIONS

DEPART FROM SPRINT:
1 INTERNATIONAL BLVD. MAHWAH, NJ 07495

1. HEAD SOUTH ON INTERNATIONAL BLVD TOWARD AVE OF AMERICAS 0.1 MI 2. TURN RIGHT ONTO PARK LN 197 FT 3. CONTINUE STRAIGHT ONTO LEISURE LN 0.1 MI 4. SLIGHT RIGHT ONTO NJ-17 N 0.3 MI 5. MERGE ONTO I-287 N/NJ-17 N VIA THE RAMP ON THE LEFT TO I-87/N Y. THRUWAY ENTERING NEW YORK 0.6 MI 6. KEEP RIGHT AT THE FORK, FOLLOW SIGNS FOR I-87 S/I-287/TAPPAN ZEE BR/NEW YORK CITY/NEW YORK THRUWAY AND MERGE ONTO I-287 E/I-87 N CONTINUE TO FOLLOW I-287 E PARTIAL TOLL ROAD 26.3 MI 7. TAKE EXIT 9N-9S FOR HUTCHINSON PKWY TOWARD WHITESTONE BRIDGE/MERRITT PKWY 0.2 MI 8. MERGE ONTO WESTCHESTER AVE E 0.3 MI 9. TAKE THE HUTCHINSON PKWY N RAMP TO MERRITT PKWY 0.2 MI 10. MERGE ONTO HUTCHINSON RIVER PKWY N ENTERING CONNECTICUT 3.1 MI 11. CONTINUE ONTO CT-15 N 46.5 MI 12. TAKE EXIT 59 FOR CT-69 TOWARD CT-63/NEW HAVEN/WOODBRIDGE 0.1 MI 13. TURN RIGHT ONTO CT-69 S/WHALLEY AVE 0.2 MI 14. SHARP RIGHT ONTO CT-63 N/AMITY RD DESTINATION WILL BE ON THE LEFT 7.7 MI

VICINITY MAP



NETWORK VISION MMBTS LAUNCH
CONNECTICUT MARKET

SITE NAME

BETHANY

SITE NUMBER

CT33XC515

SITE ADDRESS

719 AMITY ROAD
BETHANY, CT 06524

STRUCTURE TYPE

MONOPOLE TOWER



UNDERGROUND SERVICE ALERT
CALL TOLL FREE 1-800-922-4455

THREE WORKING DAYS BEFORE YOU DIG

PROJECT TEAM



808 AVIATION PARKWAY
SUITE 700
MORRISVILLE, NC 27650

PROJECT MANAGER



11 Herbert Drive
Latham, NY 12110
OFFICE #: (518) 690-0790
FAX #: (518) 690-0793

ENGINEER

SCOPE OF WORK:

- HANDICAP ACCESS REQUIREMENTS ARE NOT REQUIRED
- FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
- FACILITY HAS NO PLUMBING OR REFRIGERANTS
- THIS FACILITY SHALL MEET OR EXCEED ALL FAA AND FCC REGULATORY REQUIREMENTS
- ALL NEW MATERIAL SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS NOTED OTHERWISE. CABINETS, ANTENNAS/RRU AND CABLES FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR
- INSTALL NEW ANTENNAS/RRH'S ON EXISTING STRUCTURE
- INSTALL NEW BTS OR RETROFIT EXISTING BTS IN EXISTING EQUIPMENT AREA
- REMOVE EXISTING CDMA ANTENNAS AND COAX CABLES
- SPRINT TO REPLACE EXISTING POWER CABINET WITH NEW SECOND BATTERY CABINET OR INSTALL NEW SECOND BATTERY CABINET IF THERE IS AVAILABLE SPACE IN EXISTING SPRINT LEASE AREA.

PROJECT SUMMARY

SITE NAME: BETHANY
 SITE NO.: CT33XC515
 SITE ADDRESS: 719 AMITY ROAD BETHANY, CT 06524
 COUNTY: NEW HAVEN
 SITE COORDINATES:
 LATITUDE: 41° 26' 33.935" N (NAD 83)
 LONGITUDE: 72° 59' 32.855" W (NAD 83)
 GROUND ELEV.: ±754' (AMSL)
 JURISDICTION: TOWN OF BETHANY
 APPLICANT: SPRINT
 1 INTERNATIONAL BLVD.
 MAHWAH, NJ 07495
 LAND OWNER: NEW CINGULAR WIRELESS PCS, LLC
 ATTN: AT&T TOWERS
 6100 ATLANTIC BOULEVARD
 NORCROSS, GA 30071
 CONSTRUCTION MANAGER: TODD AMANN
 914-715-9363
 BUILDING CODE: 2003 INTERNATIONAL BUILDING CODE
 2005 CONNECTICUT BUILDING CODE
 W/ 2009 AMENDMENT
 ELECTRICAL CODE: 2005 NATIONAL ELECTRIC CODE

ENGINEER'S LICENSE

CERTIFICATION STATEMENT:
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF CONNECTICUT.
 LICENSED ENGINEER - STATE OF CONNECTICUT



No.	Submittal / Revision	App'd	Date
5	FINAL CD'S	EKM	2/19/13
4	REVISED PER COMMENTS	EKM	5/22/12
3	REVISED PER COMMENTS	EKM	5/4/12
2	REVISED PER COMMENTS	EKM	4/11/12
1	REVISED PER COMMENTS	EKM	4/05/12
0	ISSUED FOR REVIEW	SKB	3/16/12

Drawn: SKB Date: 3/16/12
 Designed: EKM Date: 3/16/12
 Checked: CW Date: 3/16/12

Project Number: 286-046
 Project Title: CT33XC515 BETHANY
 719 AMITY ROAD
 BETHANY, CT 06524

Client: Sprint
 Implementation Team: ALCATEL-LUCENT
 808 AVIATION PARKWAY
 SUITE 700
 MORRISVILLE, NC 27650

Drawing Scale: AS NOTED
 Date: 2/19/13

APPROVALS

SPRINT CONST.	DATE
ALU RF	DATE
ALU LEASING/SITE ACQ.	DATE
IN-MARKET CONSTRUCTION LEAD	DATE
SITE OWNER	DATE
NAME/COMPANY: TITLE:	DATE

TITLE SHEET

Drawing Number: T1

A/E Consultant:

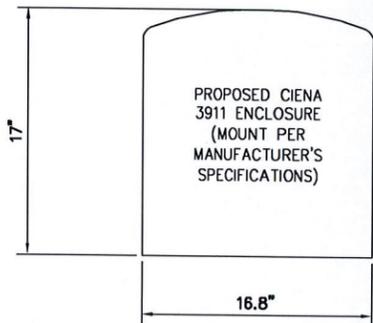
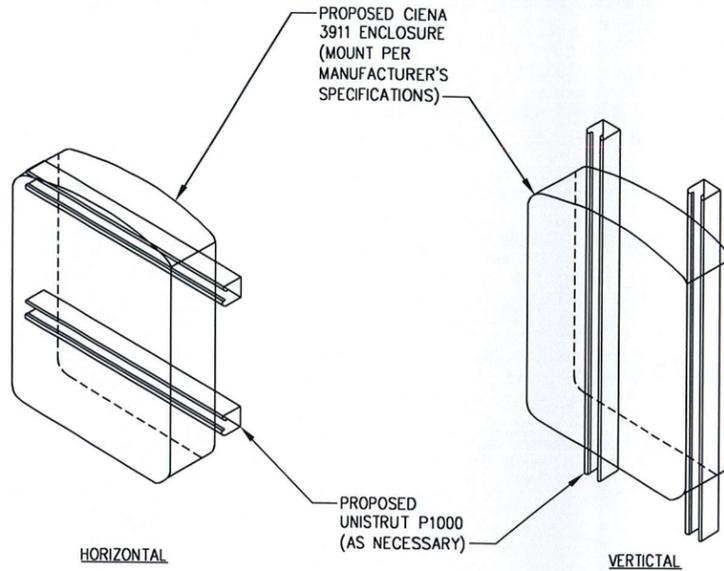
infinigy engineering
 11 Herbert Drive
 Latham, NY 12110
 (518) 690-0790

GENERAL NOTES:

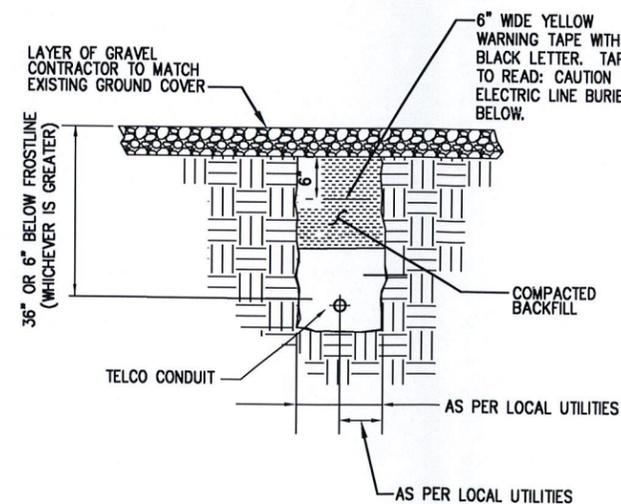
1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
4. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OF PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
5. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
6. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDORS SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
7. THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
8. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
10. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
11. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
12. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
13. THE CONTRACTOR SHALL NOTIFY THE REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE REPRESENTATIVE.
14. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.
15. ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE INVESTIGATIONS AND EXISTING PLANS OF RECORD OR VIA A REPRESENTATIVE. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK. SEE UNDERGROUND UTILITY COMPANY SHEET T-1 (DIG SAFE, MISS UTILITY, ETC.)
16. IF ASSUMED EXISTING CONDITION DIFFERS, ENGINEER MUST BE INFORMED OF ACTUAL FIELD CONDITION.
17. REFER TO THE SITE PLAN FOR APPROXIMATE LENGTH OF ALL U/G WORK AND LOCATION. FINAL LOCATION TO BE DETERMINED BY CLIENT. ALL MATERIALS TO BE USED AS ACCORDING TO DETAIL INSTRUCTIONS. ALL MATERIALS NOT INCLUDED IN THE DETAILS SHALL BE USED ACCORDING TO CODE AND/OR LOCAL JURISDICTION REGULATIONS INCLUDING MATERIALS, PREPARATION, EXACERBATION, EQUIPMENT AND INSTALLATION FOR UNDERGROUND WORK.
18. CONTRACTOR TO COORDINATE WITH SPRINT & PROVIDE GROUND BOND PER NE-250 & SPRINT STANDARDS FOR CLIENT EQUIPMENT AS REQUIRED.
19. ALL ELECTRICAL SPECIFICATIONS SHALL BE IN STRICT ACCORDANCE TO SECTIONS 16010, 16075, 16110, 16120, 16410 AND 16450 OF THE N.E.C.

ELECTRICAL AND GROUNDING NOTES:

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
3. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIREMENT IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS
4. PROVISION OF AC/DC POWER IS UNDER SEPARATE SCOPE OF WORK
5. GROUNDING SHALL COMPLY WITH NEC ART. 250. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION FITTINGS. TEST COMPLETED GROUND SYSTEM AND ENSURE ADEQUACY.
6. CONTRACTOR TO PROVIDE GALV. P1000 UNISTRUT FRAMING AND 3/8" GALV. U-BOLTS/BOLTS AS NECESSARY FOR EXISTING CONDITIONS AND TO VERIFY SPACE IS APPROVED BY ALL NECESSARY PARTIES.

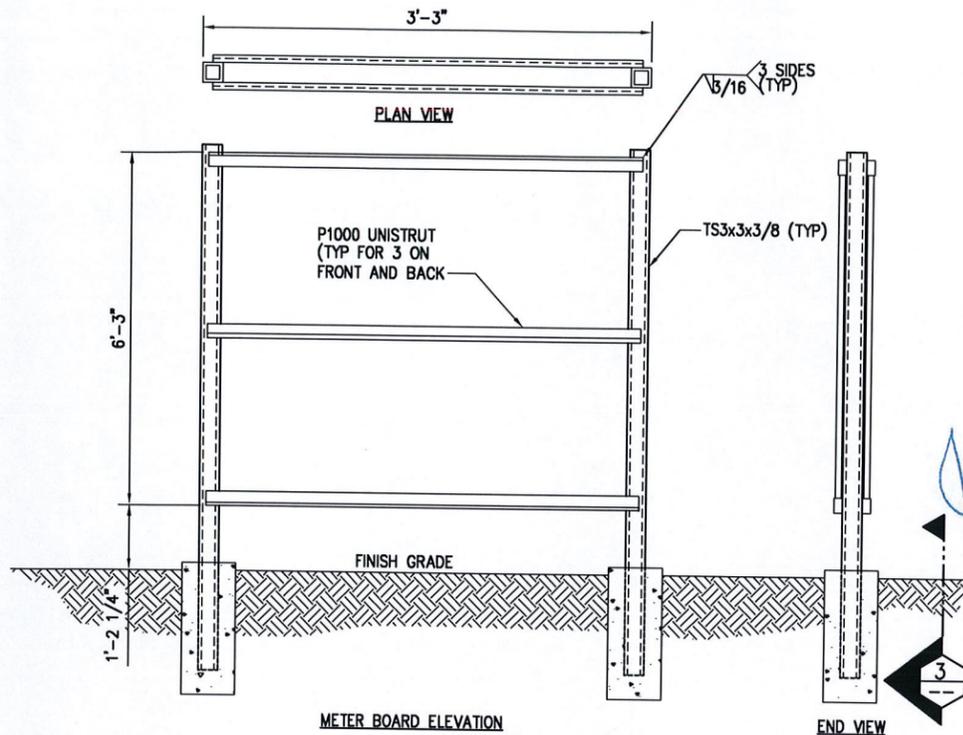


1 TYPICAL CIENA 3911 MOUNTING DETAIL
SCALE: NOT TO SCALE

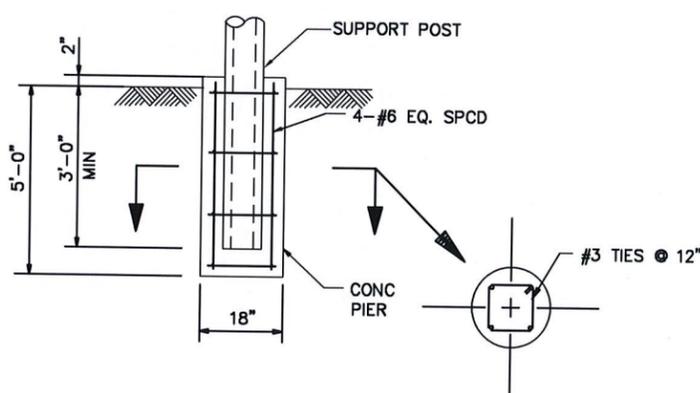


NOTE:
NUMBER AND SIZE OF CONDUITS MAY VARY. SEE DWG FOR CONDUIT SIZE AND LOCATION. CONFIRM CONDUIT SEPARATION AND DIMENSIONS SHOWN WITH LOCAL UTILITY COMPANY.

2 CONDUIT TRENCH DETAIL
NO SCALE



3 3'-0\"/> NOT TO SCALE



4 SUPPORT PIER
NOT TO SCALE

A/E Consultant:

infinig
engineering
11 Herbert Drive
Latham, NY 12110
(518) 690-0790



THIS DRAWING IS A LEGAL INSTRUMENT OR ADDITION TO THIS INSTRUMENT IS A VIOLATION OF APPLICABLE STATE AND/OR LOCAL LAWS

No.	Submittal / Revision	App'd	Date
5	FINAL CD'S	EKM	2/19/13
4	REVISED PER COMMENTS	EKM	3/22/12
3	REVISED PER COMMENTS	EKM	3/4/12
2	REVISED PER COMMENTS	EKM	4/11/12
1	REVISED PER COMMENTS	EKM	4/05/12
0	ISSUED FOR REVIEW	SKB	3/16/12

Drawn: SKB Date: 3/16/12
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Checked: CMW Date: 3/16/12

Project Number: 286-046

Project Title:
CT33XC515 BETHANY

719 AMITY ROAD
BETHANY, CT 06524

Client: Sprint
Implementation Team: Alcatel-Lucent



Drawing Scale: AS NOTED
Date: 2/19/13

Drawing Title:
NOTES & DETAILS

Drawing Number:
AAV2

GENERAL NOTES

PART 1 - GENERAL REQUIREMENTS

- 1.1 THE WORK SHALL COMPLY WITH APPLICABLE NATIONAL CODES AND STANDARDS, LATEST EDITION, AND PORTIONS THEREOF, INCLUDED BUT NOT LIMITED TO THE FOLLOWING:
- A. GR-63-CORE NEBS REQUIREMENTS: PHYSICAL PROTECTION
 - B. GR-78-CORE GENERIC REQUIREMENTS FOR THE PHYSICAL DESIGN AND MANUFACTURE OF TELECOMMUNICATIONS EQUIPMENT.
 - C. NATIONAL FIRE PROTECTION ASSOCIATION CODES AND STANDARDS (NFPA) INCLUDING NFPA 70 (NATIONAL ELECTRICAL CODE - "NEC").
 - D. AND NFPA 101 (LIFE SAFETY CODE).
 - E. AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM).
 - F. INSTITUTE OF ELECTRONIC AND ELECTRICAL ENGINEERS (IEEE).
- 1.2 DEFINITIONS:
- A. WORK: THE SUM OF TASKS AND RESPONSIBILITIES IDENTIFIED IN THE CONTRACT DOCUMENTS.
 - B. COMPANY: SPRINT NEXTEL CORPORATION
 - C. ENGINEER: SYNONYMOUS WITH ARCHITECT & ENGINEER AND "A&E". THE DESIGN PROFESSIONAL HAVING PROFESSIONAL RESPONSIBILITY FOR DESIGN OF THE PROJECT.
 - D. CONTRACTOR: CONSTRUCTION CONTRACTOR; CONSTRUCTION VENDOR; INDIVIDUAL OR ENTITY WHO AFTER EXECUTION OF A CONTRACT IS BOUND TO ACCOMPLISH THE WORK.
 - E. THIRD PARTY VENDOR OR AGENCY: A VENDOR OR AGENCY ENGAGED SEPARATELY BY THE COMPANY, A&E, OR CONTRACTOR TO PROVIDE MATERIALS OR TO ACCOMPLISH SPECIFIC TASKS RELATED TO BUT NOT INCLUDED IN THE WORK.
- 1.3 POINT OF CONTACT: COMMUNICATION BETWEEN THE COMPANY AND THE CONTRACTOR SHALL FLOW THROUGH THE SINGLE COMPANY SITE DEVELOPMENT SPECIALIST OR OTHER PROJECT COORDINATOR APPOINTED TO MANAGE THE PROJECT FOR THE COMPANY.
- 1.4 ON-SITE SUPERVISION: THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL EMPLOY A COMPETENT SUPERINTENDENT WHO SHALL BE IN ATTENDANCE AT THE SITE AT ALL TIMES DURING PERFORMANCE OF THE WORK.
- 1.5 DRAWINGS, SPECIFICATIONS AND DETAILS REQUIRED AT JOBSITE: THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A FULL SET OF THE CONSTRUCTION DRAWINGS, STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES, AND THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES AT THE JOBSITE FROM MOBILIZATION THROUGH CONSTRUCTION COMPLETION.
- A. THE JOBSITE DRAWINGS, SPECIFICATIONS AND DETAILS SHALL BE CLEARLY MARKED DAILY IN PENCIL WITH ANY CHANGES IN CONSTRUCTION OVER WHAT IS DEPICTED IN THE DOCUMENTS. AT CONSTRUCTION COMPLETION, THIS JOBSITE MARKUP SET SHALL BE DELIVERED TO THE COMPANY OR COMPANY'S DESIGNATED REPRESENTATIVE TO BE FORWARDED TO THE COMPANY'S A&E VENDOR FOR PRODUCTION OF "AS-BUILT" DRAWINGS.
- 1.6 USE OF JOB SITE: THE CONTRACTOR SHALL CONFINE ALL CONSTRUCTION AND RELATED OPERATIONS INCLUDING STAGING AND STORAGE OF MATERIALS AND EQUIPMENT, PARKING, TEMPORARY FACILITIES, AND WASTE STORAGE TO THE LEASE PARCEL UNLESS OTHERWISE PERMITTED BY THE CONTRACT DOCUMENTS.
- 1.7 NOTICE TO PROCEED:
- A. NO WORK SHALL COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED.
 - B. UPON RECEIVING NOTICE TO PROCEED, CONTRACTOR SHALL FULLY PERFORM ALL WORK NECESSARY TO PROVIDE SPRINT NEXTEL WITH AN OPERATIONAL WIRELESS FACILITY.

PART 2 - EXECUTION

- 2.1 TEMPORARY UTILITIES AND FACILITIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY UTILITIES AND FACILITIES NECESSARY EXCEPT AS OTHERWISE INDICATED IN THE CONSTRUCTION DOCUMENTS. TEMPORARY UTILITIES AND FACILITIES INCLUDE, POTABLE WATER, HEAT, HVAC, ELECTRICITY, SANITARY FACILITIES, WASTE DISPOSAL FACILITIES, AND TELEPHONE/COMMUNICATION SERVICES. PROVIDE TEMPORARY UTILITIES AND FACILITIES IN ACCORDANCE WITH OSHA AND THE AUTHORITY HAVING JURISDICTION. CONTRACTOR MAY UTILIZE THE COMPANY ELECTRICAL SERVICE IN THE COMPLETION OF THE WORK WHEN IT BECOMES AVAILABLE. USE OF THE LESSORS OR SITE OWNER'S UTILITIES OR FACILITIES IS EXPRESSLY FORBIDDEN EXCEPT AS OTHERWISE ALLOWED IN THE CONTRACT DOCUMENTS.
- 2.2 ACCESS TO WORK: THE CONTRACTOR SHALL PROVIDE ACCESS TO THE JOB SITE FOR AUTHORIZED COMPANY PERSONNEL AND AUTHORIZED REPRESENTATIVES OF THE ARCHITECT/ENGINEER DURING ALL PHASES OF THE WORK.
- 2.3 TESTING: REQUIREMENTS FOR TESTING BY THIS CONTRACTOR SHALL BE AS INDICATED HEREWITH, ON THE CONSTRUCTION DRAWINGS, AND IN THE INDIVIDUAL SECTIONS OF THESE SPECIFICATIONS. SHOULD COMPANY CHOOSE TO ENGAGE ANY THIRD-PARTY TO CONDUCT ADDITIONAL TESTING, THE CONTRACTOR SHALL COOPERATE WITH AND PROVIDE A WORK AREA FOR COMPANY'S TEST AGENCY.

- 2.4 COMPANY FURNISHED MATERIAL AND EQUIPMENT: ALL HANDLING, STORAGE AND INSTALLATION OF COMPANY FURNISHED MATERIAL AND EQUIPMENT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
- A. CONTRACTOR SHALL PROCURE ALL OTHER REQUIRED WORK RELATED MATERIALS NOT PROVIDED BY SPRINT NEXTEL TO SUCCESSFULLY CONSTRUCT A WIRELESS FACILITY.
- 2.5 DIMENSIONS: VERIFY DIMENSIONS INDICATED ON DRAWINGS WITH FIELD DIMENSIONS BEFORE FABRICATION OR ORDERING OF MATERIALS. DO NOT SCALE DRAWINGS.
- 2.6 EXISTING CONDITIONS: NOTIFY THE COMPANY REPRESENTATIVE OF EXISTING CONDITIONS DIFFERING FROM THOSE INDICATED ON THE DRAWINGS. DO NOT REMOVE OR ALTER STRUCTURAL COMPONENTS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT AND ENGINEER.

PART 3 - RECEIPT OF MATERIAL & EQUIPMENT

- 3.1 RECEIPT OF MATERIAL AND EQUIPMENT: CONTRACTOR IS RESPONSIBLE FOR SPRINT NEXTEL PROVIDED MATERIAL AND EQUIPMENT AND UPON RECEIPT SHALL:
- A. ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.
 - B. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES.
 - C. TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT.
 - D. RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY-FOUR HOURS AFTER RECEIPT, REPORT TO SPRINT NEXTEL OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH.
 - E. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING.
 - F. COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF-LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.

PART 4 - GENERAL REQUIREMENTS FOR CONSTRUCTION

- 4.1 CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH. AT THE COMPLETION OF THE WORK, CONTRACTOR SHALL REMOVE FROM THE SITE ALL REMAINING RUBBISH, IMPLEMENTS, TEMPORARY FACILITIES, AND SURPLUS MATERIALS.
- 4.2 EQUIPMENT ROOMS SHALL AT ALL TIMES BE MAINTAINED "BROOM CLEAN" AND CLEAR OF DEBRIS.
- 4.3 CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO DISCOVER AND LOCATE ANY HAZARDOUS CONDITION.
- A. IN THE EVENT CONTRACTOR ENCOUNTERS ANY HAZARDOUS CONDITION WHICH HAS NOT BEEN ABATED OR OTHERWISE MITIGATED, CONTRACTOR AND ALL OTHER PERSONS SHALL IMMEDIATELY STOP WORK IN THE AFFECTED AREA AND NOTIFY COMPANY IN WRITING. THE WORK IN THE AFFECTED AREA SHALL NOT BE RESUMED EXCEPT BY WRITTEN NOTIFICATION BY COMPANY.
 - B. CONTRACTOR AGREES TO USE CARE WHILE ON THE SITE AND SHALL NOT TAKE ANY ACTION THAT WILL OR MAY RESULT IN OR CAUSE THE HAZARDOUS CONDITION TO BE FURTHER RELEASED IN THE ENVIRONMENT, OR TO FURTHER EXPOSE INDIVIDUALS TO THE HAZARD.
- 4.4 CONTRACTOR'S ACTIVITIES SHALL BE RESTRICTED TO THE PROJECT LIMITS. SHOULD AREAS OUTSIDE THE PROJECT LIMITS BE AFFECTED BY CONTRACTOR'S ACTIVITIES, CONTRACTOR SHALL IMMEDIATELY RETURN THEM TO ORIGINAL CONDITION
- 4.5 CONDUCT TESTING AS REQUIRED HEREIN.

PART 5 - TESTS AND INSPECTIONS

- 5.1 TESTS AND INSPECTIONS:
- A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION.
 - B. CONTRACTOR SHALL COORDINATE TEST AND INSPECTION SCHEDULES WITH COMPANY'S REPRESENTATIVE WHO MUST BE ON SITE TO WITNESS SUCH TESTS AND INSPECTIONS.
 - C. WHEN THE USE OF A THIRD PARTY INDEPENDENT TESTING AGENCY IS REQUIRED, THE AGENCY THAT IS SELECTED MUST PERFORM SUCH WORK ON A REGULAR BASIS IN THE STATE WHERE THE PROJECT IS LOCATED AND HAVE A THOROUGH UNDERSTANDING OF LOCAL AVAILABLE MATERIALS, INCLUDING THE SOIL, ROCK, AND GROUNDWATER CONDITIONS.
 - D. THE THIRD PARTY TESTING AGENCY IS TO BE FAMILIAR WITH THE APPLICABLE REQUIREMENTS FOR THE TESTS TO BE DONE, EQUIPMENT TO BE USED, AND ASSOCIATED HEALTH AND SAFETY ISSUES.
 - E. SITE RESISTANCE TO EARTH TESTING PER EXHIBIT: CELL SITE GROUNDING SYSTEM DESIGN.
 - F. ANTENNA AND COAX SWEEP TESTS PER EXHIBIT: ANTENNA TRANSMISSION LINE ACCEPTANCE STANDARDS. HYBERFLEX TESTING NOT LIMITED TO COAX SWEEPS.
 - G. ALL OTHER TESTS REQUIRED BY COMPANY OR JURISDICTION.

PART 6 - TRENCHING AND BACKFILLING

- 6.1 TRENCHING AND BACKFILLING: THE CONTRACTOR SHALL PERFORM ALL EXCAVATION OF EVERY DESCRIPTION AND OF WHATEVER SUBSTANCES ENCOUNTERED, TO THE DEPTHS INDICATED ON THE CONSTRUCTION DRAWINGS OR AS OTHERWISE SPECIFIED.
- A. PROTECTION OF EXISTING UTILITIES: THE CONTRACTOR SHALL CHECK WITH THE LOCAL UTILITIES AND THE RESPECTIVE UTILITY LOCATOR COMPANIES PRIOR TO STARTING EXCAVATION OPERATIONS IN EACH RESPECTIVE AREA TO ASCERTAIN THE LOCATIONS OF KNOWN UTILITY LINES. THE LOCATIONS, NUMBER AND TYPES OF EXISTING UTILITY LINES DETAILED ON THE CONSTRUCTION DRAWINGS ARE APPROXIMATE AND DO NOT REPRESENT EXACT INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ALL LINES DAMAGED DURING EXCAVATION AND ALL ASSOCIATED OPERATIONS. ALL UTILITY LINES UNCOVERED DURING THE EXCAVATION OPERATIONS, SHALL BE PROTECTED FROM DAMAGE DURING EXCAVATION AND ASSOCIATED OPERATIONS. ALL REPAIRS SHALL BE APPROVED BY THE UTILITY COMPANY.
 - B. HAND DIGGING: UNLESS APPROVED IN WRITING OTHERWISE, ALL DIGGING WITHIN AN EXISTING CELL SITE COMPOUND IS TO BE DONE BY HAND.
 - C. DURING EXCAVATION, MATERIAL SUITABLE FOR BACKFILLING SHALL BE STOCKPILED IN AN ORDERLY MANNER A SUFFICIENT DISTANCE FROM THE BANKS OF THE TRENCH TO AVOID OVERLOADING AND TO PREVENT SLIDES OR CAVE-INS. ALL EXCAVATED MATERIALS NOT REQUIRED OR SUITABLE FOR BACKFILL SHALL BE REMOVED AND DISPOSED OF AT THE CONTRACTOR'S EXPENSE.
 - D. GRADING SHALL BE DONE AS MAY BE NECESSARY TO PREVENT SURFACE WATER FROM FLOWING INTO TRENCHES OR OTHER EXCAVATIONS, AND ANY WATER ACCUMULATING THEREIN SHALL BE REMOVED BY PUMPING OR BY OTHER APPROVED METHOD.
 - E. SHEETING AND SHORING SHALL BE DONE AS NECESSARY FOR THE PROTECTION OF THE WORK AND FOR THE SAFETY OF PERSONNEL. UNLESS OTHERWISE INDICATED, EXCAVATION SHALL BE BY OPEN CUT, EXCEPT THAT SHORT SECTIONS OF A TRENCH MAY BE TUNNELED IF, THE CONDUIT CAN BE SAFELY AND PROPERLY INSTALLED AND BACKFILL CAN BE PROPERLY TAMPED IN SUCH TUNNEL SECTIONS. EARTH EXCAVATION SHALL COMPRISE ALL MATERIALS AND SHALL INCLUDE CLAY, SILT, SAND, MUCK, GRAVEL, HARDPAN, LOOSE SHALE, AND LOOSE STONE.
 - F. TRENCHES SHALL BE OF NECESSARY WIDTH FOR THE PROPER LAYING OF THE CONDUIT OR CABLE, AND THE BANKS SHALL BE AS NEARLY VERTICAL AS PRACTICABLE. THE BOTTOM OF THE TRENCHES SHALL BE ACCURATELY GRADED TO PROVIDE UNIFORM BEARING AND SUPPORT FOR EACH SECTION OF THE CONDUIT OR CABLE ON UNDISTURBED SOIL AT EVERY POINT ALONG ITS ENTIRE LENGTH. EXCEPT WHERE ROCK IS ENCOUNTERED, CARE SHALL BE TAKEN NOT TO EXCAVATE BELOW THE DEPTHS INDICATED. WHERE ROCK EXCAVATIONS ARE NECESSARY, THE ROCK SHALL BE EXCAVATED TO A MINIMUM OVER DEPTH OF 6 INCHES BELOW THE TRENCH DEPTHS INDICATED ON THE CONSTRUCTION DRAWINGS OR SPECIFIED. OVER DEPTHS IN THE ROCK EXCAVATION AND UNAUTHORIZED OVER DEPTHS SHALL BE THOROUGHLY BACK FILLED AND TAMPED TO THE APPROPRIATE GRADE. WHENEVER WET OR OTHERWISE UNSTABLE SOIL THAT IS INCAPABLE OF PROPERLY SUPPORTING THE CONDUIT OR CABLE IS ENCOUNTERED IN THE BOTTOM OF THE TRENCH, SUCH SOLID SHALL BE REMOVED TO A MINIMUM OVER DEPTH OF 6 INCHES AND THE TRENCH BACKFILLED TO THE PROPER GRADE WITH EARTH OF OTHER SUITABLE MATERIAL, AS HEREINAFTER SPECIFIED.
 - G. BACKFILLING OF TRENCHES. TRENCHES SHALL NOT BE BACKFILLED UNTIL ALL SPECIFIED TESTS HAVE BEEN PERFORMED AND ACCEPTED. WHERE COMPACTED BACKFILL IS NOT INDICATED THE TRENCHES SHALL BE CAREFULLY BACKFILLED WITH SELECT MATERIAL SUCH AS EXCAVATED SOILS THAT ARE FREE OF ROOTS, SOD, RUBBISH OR STONES, DEPOSITED IN 6 INCH LAYERS AND THOROUGHLY AND CAREFULLY RAMMED UNTIL THE CONDUIT OR CABLE HAS A COVER OF NOT LESS THAN 1 FOOT. THE REMAINDER OF THE BACKFILL MATERIAL SHALL BE GRANULAR IN NATURE AND SHALL NOT CONTAIN ROOTS, SOD, RUBBING, OR STONES OF 2-1/2 INCH MAXIMUM DIMENSION. BACKFILL SHALL BE CAREFULLY PLACED IN THE TRENCH AND IN 1 FOOT LAYERS AND EACH LAYER TAMPED. SETTLING THE BACKFILL WITH WATER WILL BE PERMITTED. THE SURFACE SHALL BE GRADED TO A REASONABLE UNIFORMITY AND THE MOUNDING OVER THE TRENCHES LEFT IN A UNIFORM AND NEAT CONDITION.

PROJECT INFORMATION

THIS IS AN UNMANNED AND RESTRICTED ACCESS EQUIPMENT FACILITY AND WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNALS FOR THE PURPOSE OF PROVIDING PUBLIC WIRELESS COMMUNICATIONS SERVICE.

NO POTABLE WATER SUPPLY IS TO BE PROVIDED AT THIS LOCATION.

NO WASTE WATER WILL BE GENERATED AT THIS LOCATION.

NO SOLID WASTE WILL BE GENERATED AT THIS LOCATION.

SPRINT MAINTENANCE CREW (TYPICALLY ONE PERSON) WILL MAKE AN AVERAGE OF ONE TRIP PER MONTH AT ONE HOUR PER VISIT.

LEGEND

SYMBOL	DESCRIPTION
	CIRCUIT BREAKER
	NON-FUSIBLE DISCONNECT SWITCH
	FUSIBLE DISCONNECT SWITCH
	SURFACE MOUNTED PANEL BOARD
	TRANSFORMER
	KILOWATT HOUR METER
	JUNCTION BOX
	PULL BOX TO NEC/TELCO STANDARDS
-----	UNDERGROUND UTILITIES
	DENOTES REFERENCE NOTE
	EXOTHERMIC WELD CONNECTION
	MECHANICAL CONNECTION
	GROUND ROD
	GROUND ROD WITH INSPECTION SLEEVE
	GROUND BAR
	PIN AND SLEEVE RECEPTACLE
	120AC DUPLEX RECEPTACLE
	GROUND CONDUCTOR
	REPRESENTS DETAIL NUMBER
	REF. DRAWING NUMBER

ABBREVIATIONS

CIGBE	COAX ISOLATED GROUND BAR EXTERNAL
MIGB	MASTER ISOLATED GROUND BAR
SST	SELF SUPPORTING TOWER
GPS	GLOBAL POSITIONING SYSTEM
TYP.	TYPICAL
DWG	DRAWING
BCW	BARE COPPER WIRE
BFG	BELOW FINISH GRADE
PVC	POLYVINYL CHLORIDE
CAB	CABINET
C	CONDUIT
SS	STAINLESS STEEL
G	GROUND
AWG	AMERICAN WIRE GAUGE
RGS	RIGID GALVANIZED STEEL
AHJ	AUTHORITY HAVING JURISDICTION
TTLNA	TOWER TOP LOW NOISE AMPLIFIER
UNO	UNLESS NOTED OTHERWISE
EMT	ELECTRICAL METALLIC TUBING
AGL	ABOVE GROUND LEVEL
PVC	POLYVINYL CHLORIDE

A/E Consultant:

infinigy
engineering
11 Herbert Drive
Latham, NY 12110
(518) 690-0790



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No.	Submittal / Revision	App'd	Date
5	FINAL CD'S	EKM	2/19/13
4	REWSED PER COMMENTS	EKM	5/22/12
3	REWSED PER COMMENTS	EKM	3/4/12
2	REWSED PER COMMENTS	EKM	4/11/12
1	REWSED PER COMMENTS	EKM	4/05/12
0	ISSUED FOR REVIEW	SKB	3/16/12

Drawn: SKB Date: 3/16/12
Designed: EKM Date: 3/16/12
Checked: CWM Date: 3/16/12

Project Number: 286-046

Project Title:
**CT33XC515
BETHANY**

719 AMITY ROAD
BETHANY, CT 06524

Client: Implementation Team:



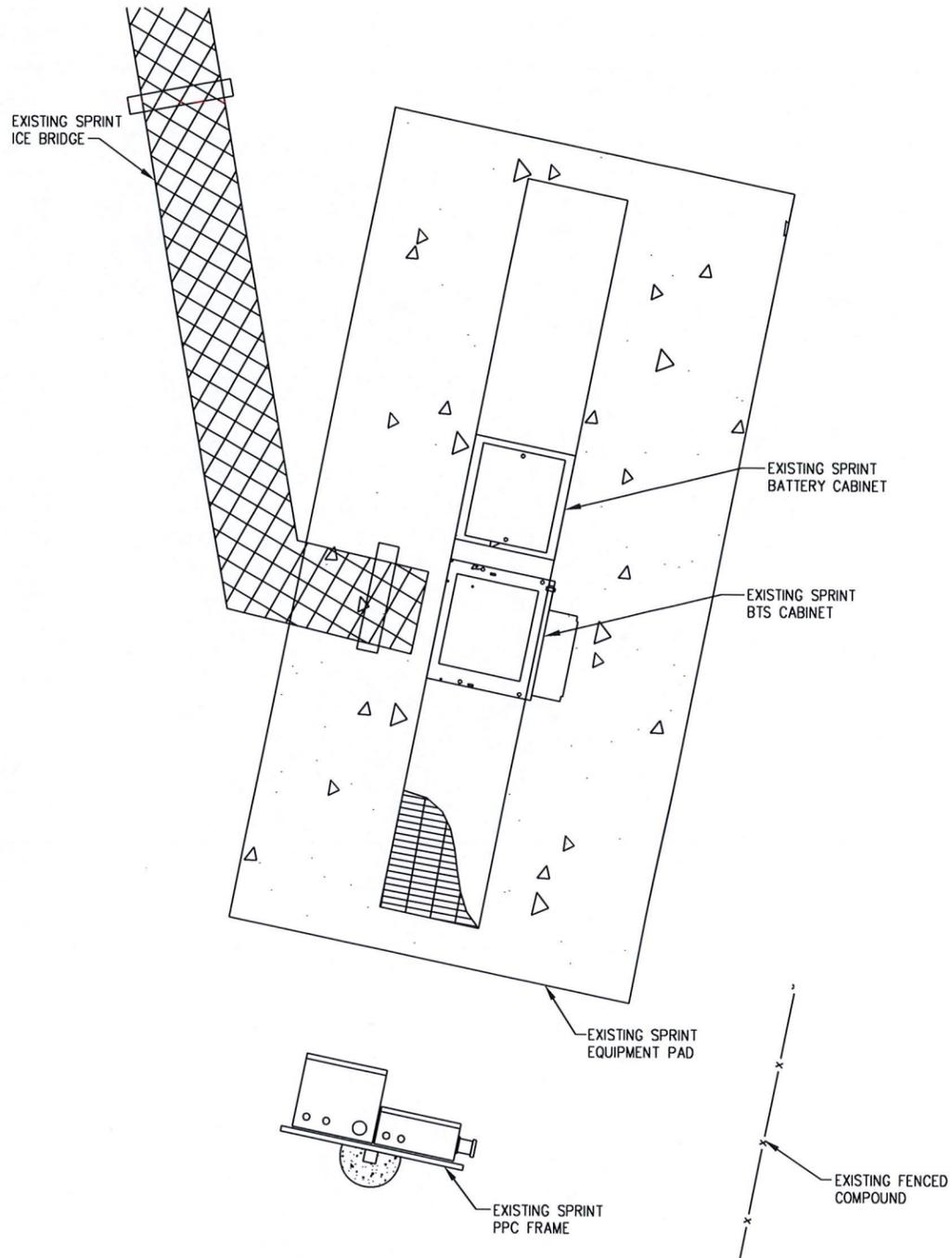
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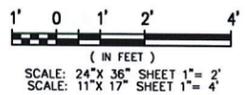
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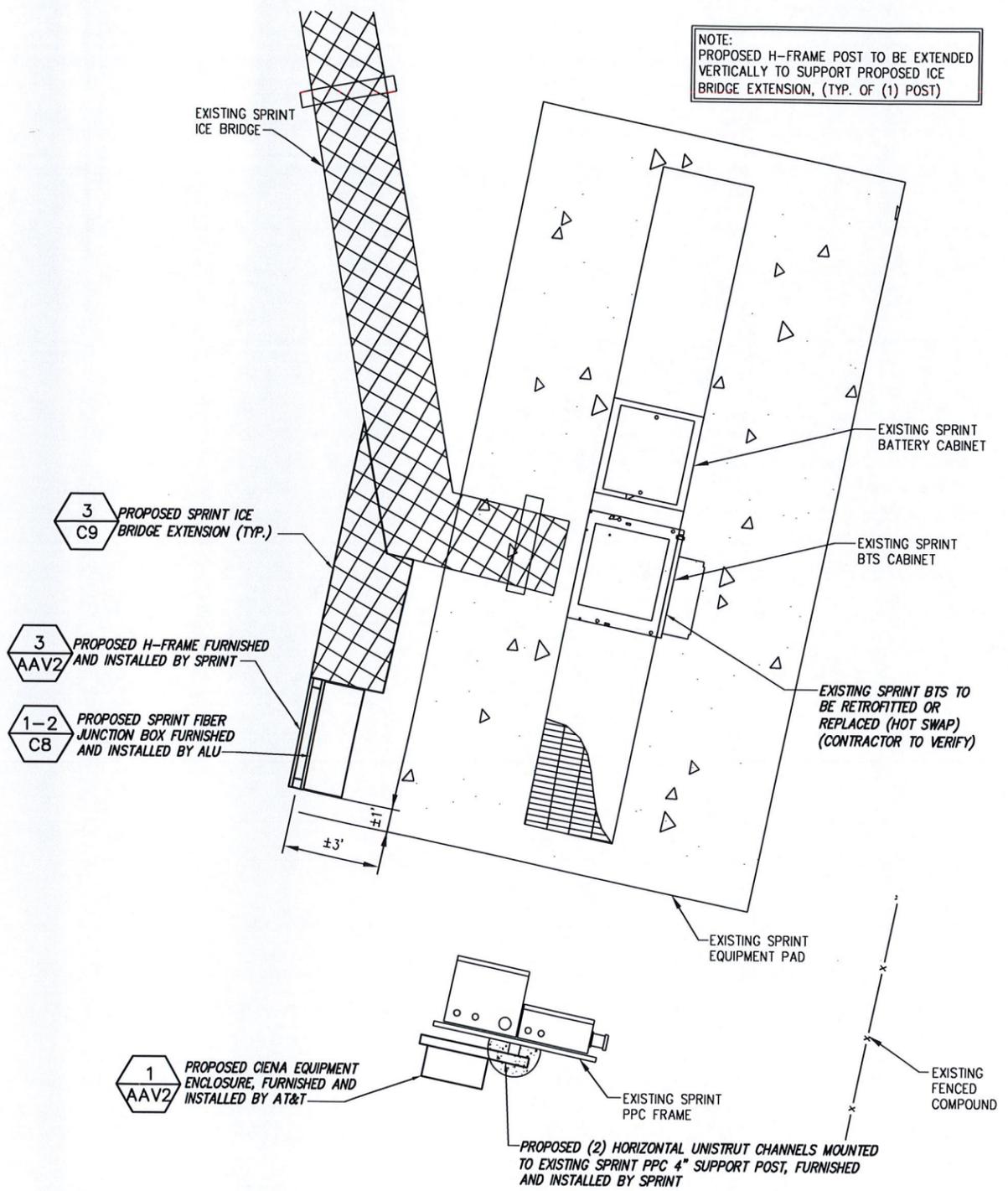
C1



1 EQUIPMENT SITE PLAN (EXISTING)
SCALE:



CALLLED NORTH

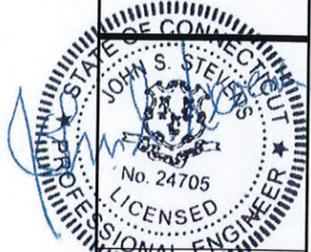


2 EQUIPMENT SITE PLAN (FINAL/PERMANENT)
SCALE:



CALLLED NORTH

NOTE:
PROPOSED H-FRAME POST TO BE EXTENDED VERTICALLY TO SUPPORT PROPOSED ICE BRIDGE EXTENSION, (TYP. OF (1) POST)



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Project Number: 286-046

Project Title:
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BETHANY

719 AMITY ROAD
BETHANY, CT 06524

Client: Implementation Team:



Drawing Scale: AS NOTED
Date: 2/19/13

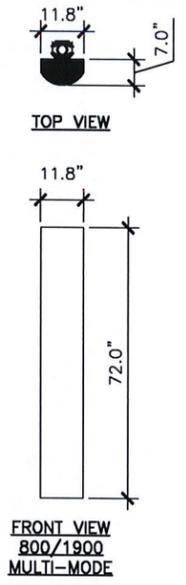
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EQUIPMENT SITE PLANS

Drawing Number:
C3

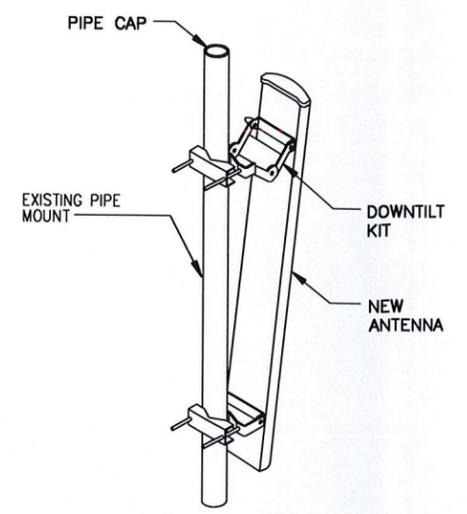
A/E Consultant:

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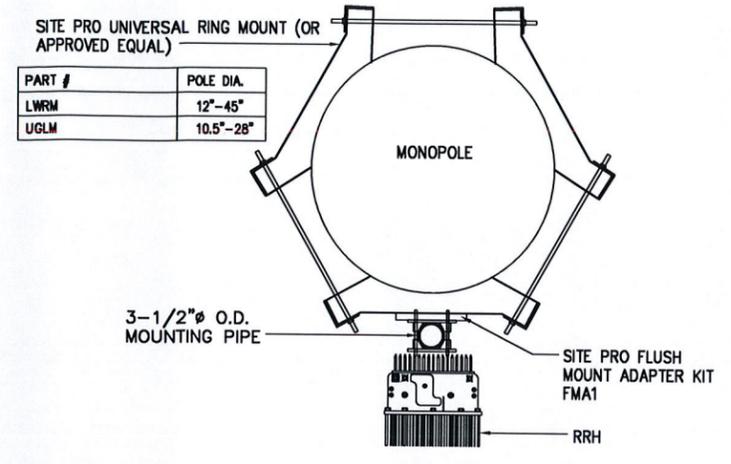
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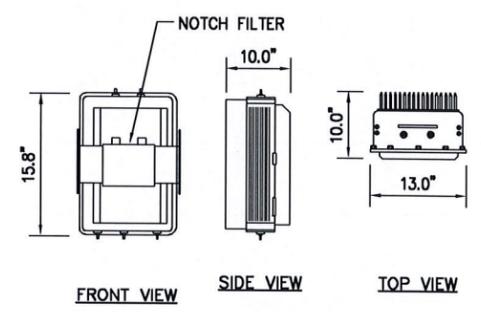
1 ANTENNA DETAILS
NOT TO SCALE



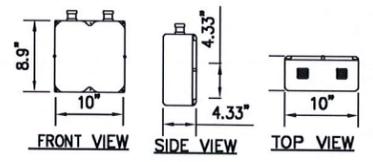
3 PANEL ANTENNA MOUNT DETAIL
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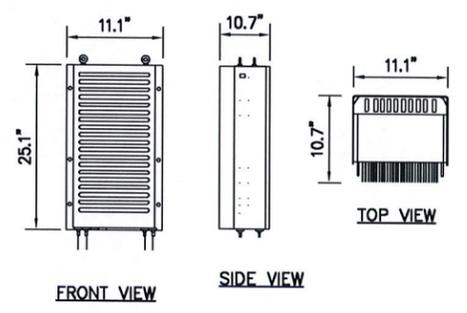
4 RRH MOUNTING DETAIL (TYP.)
NOT TO SCALE



800 MHz RRH (ALU)
WEIGHT = 50.6 LBS.



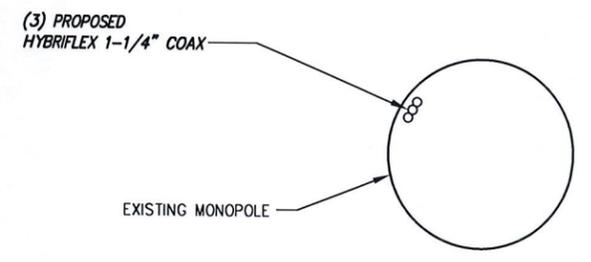
800 MHz NOTCH FILTER
WEIGHT: 9.45 LBS.



1900 MHz RRH (ALU)
WEIGHT = 60 LBS.

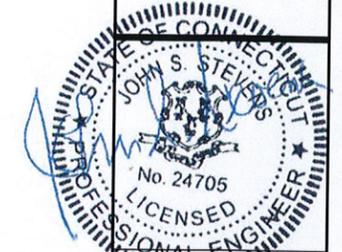
2 RRH EQUIPMENT DETAILS
NOT TO SCALE

NOTE:
REFER TO R.F. SYSTEM SCHEDULE FOR EXACT RRH SPECIFICATIONS AND QUANTITIES.



5 COAX ROUTING DETAIL
NOT TO SCALE

NOTE:
1. SUBCONTRACTOR SHALL REFERENCE THE TOWER STRUCTURAL ANALYSIS/DESIGN DRAWINGS FOR DIRECTIONS ON CABLE DISTRIBUTION/ROUTING.



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Project Number: 286-046

Project Title:
CT33XC515 BETHANY

719 AMITY ROAD
BETHANY, CT 06524

Client: **Sprint**
Implementation Team: **ALCATEL-LUCENT**

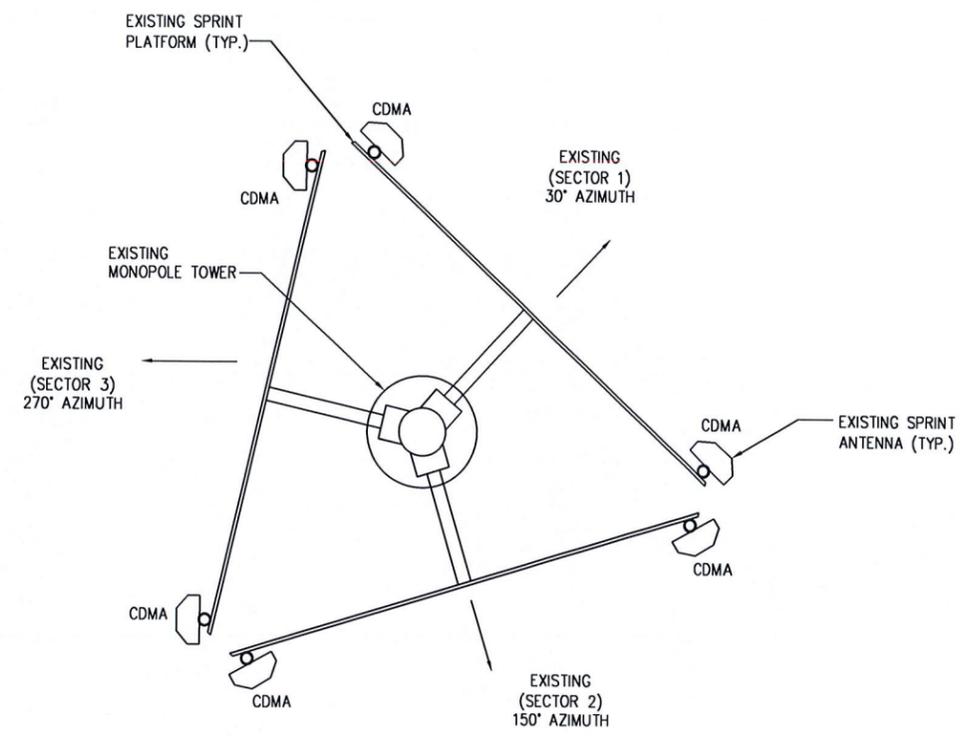
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MORRISVILLE, NC 27650

Drawing Scale: AS NOTED
Date: 2/19/13

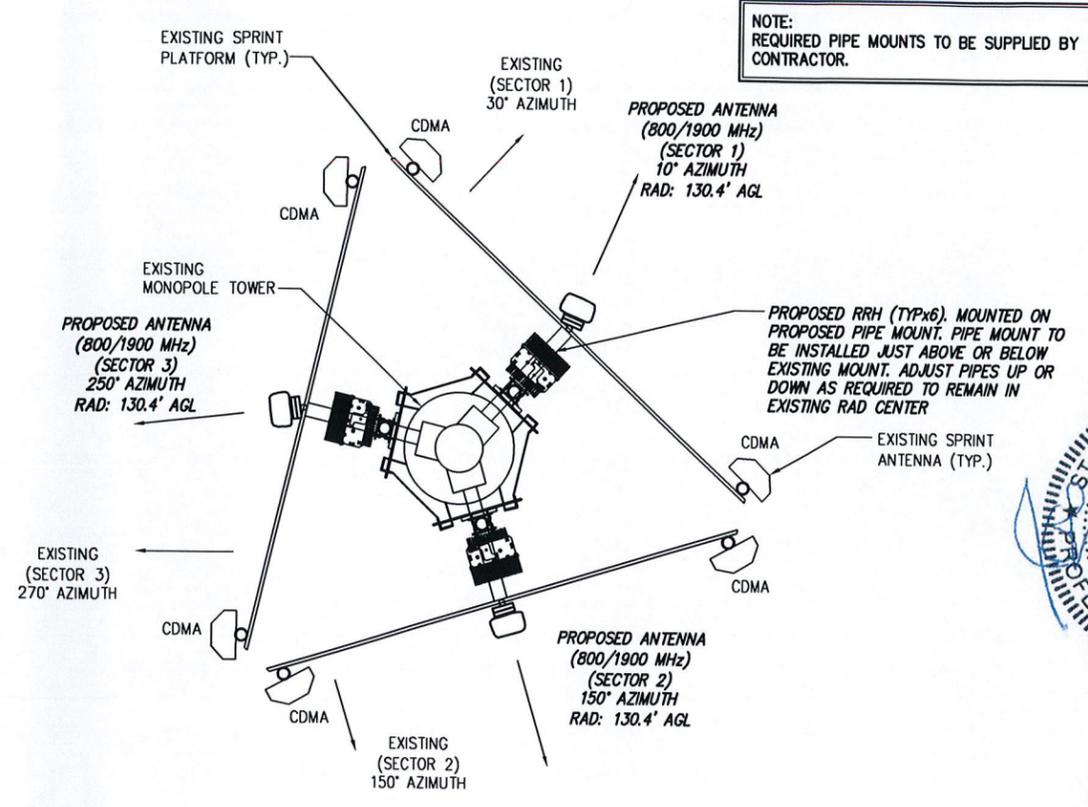
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SITE ELEVATION & ANTENNA/RRH DETAILS

Drawing Number:
C4

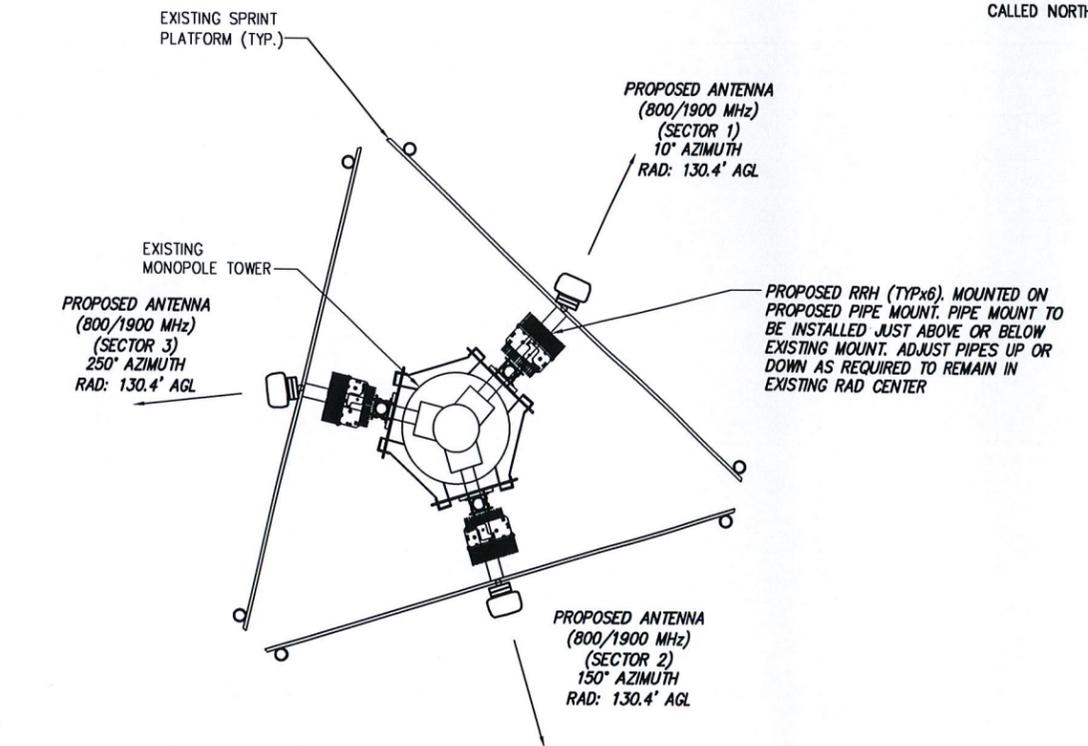
A/E Consultant:
infinigy engineering
11 Herbert Drive
Latham, NY 12110
(518) 680-0790



1 ANTENNA CONFIGURATION (EXISTING)
NOT TO SCALE



2 ANTENNA CONFIGURATION (INTERIM/TEMPORARY)
NOT TO SCALE



3 ANTENNA CONFIGURATION (FINAL/PERMANENT)
NOT TO SCALE

NOTE:
REQUIRED PIPE MOUNTS TO BE SUPPLIED BY CONTRACTOR.

PROPOSED RRH (TYPx6), MOUNTED ON PROPOSED PIPE MOUNT. PIPE MOUNT TO BE INSTALLED JUST ABOVE OR BELOW EXISTING MOUNT. ADJUST PIPES UP OR DOWN AS REQUIRED TO REMAIN IN EXISTING RAD CENTER

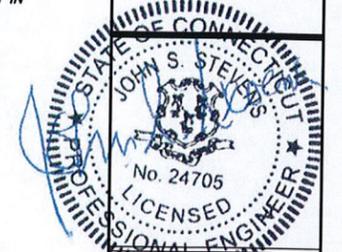
NOTES:
EXISTING RF DATA PROVIDED BY SPRINT SITERRA, SPRINT PCS DRAWINGS TITLED, SITE NO.: CT33XC515 BETHANY, DATED 10/23/01.

RRH NOTES:
- SEE PAGE C4 FOR RRH MOUNTING INFORMATION (TYP. ALL SECTORS).
- REFER TO RF SCHEDULE ON SHEET C7 FOR RRH UNIT SPECS AND QUANTITIES.

- GENERAL NOTES:
1. NEW SPRINT PANEL ANTENNAS TO MEET RF DESIGN REQUIREMENTS PER EBTS, PER APPROVED STRUCTURAL ANALYSIS.
 2. CONTRACTOR TO PROVIDE EXISTING ANTENNA VERIFICATION AND TO INCLUDE MOUNTING HEIGHT, RAD CENTER, TOP AND BOTTOM OF ANTENNA AND AZIMUTHS FOR ALL ANTENNAS.
 3. CONTRACTOR SHALL VERIFY NEW PARTS BEFORE ORDERING.
 4. REFER TO SHEET C7 FOR ANTENNAS SPECS.
 5. CONTRACTOR TO USE PROPER TORQUE WHEN INSTALLING AND TIGHTENING CONNECTORS TO INSURE PROPER FIT.
 6. ALL HYBRID CABLES SHALL BE MARKED WITHIN 24" OF THE END OF EACH CABLE WITH 2" WIDE VINYL TAPE. THIS INCLUDES ALL JUMPERS AND MAIN LINE HYBRID CABLE.
 7. CDMA ANTENNAS SHALL NOT BE REMOVED UNTIL ALL NEW MULTI-MODE ANTENNAS ARE INSTALLED AND ON-AIR.

A/E Consultant:

infinig
engineering
11 Herbert Drive
Latham, NY 12110
(518) 690-0790



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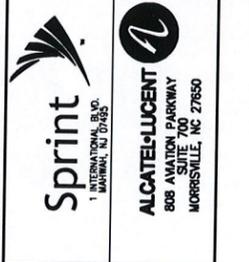
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Checked: C/M Date: 3/16/12

Project Number: 286-046

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CT33XC515
BETHANY

719 AMITY ROAD
BETHANY, CT 06524

Client: Implementation Team:



Drawing Scale: AS NOTED
Date: 2/19/13

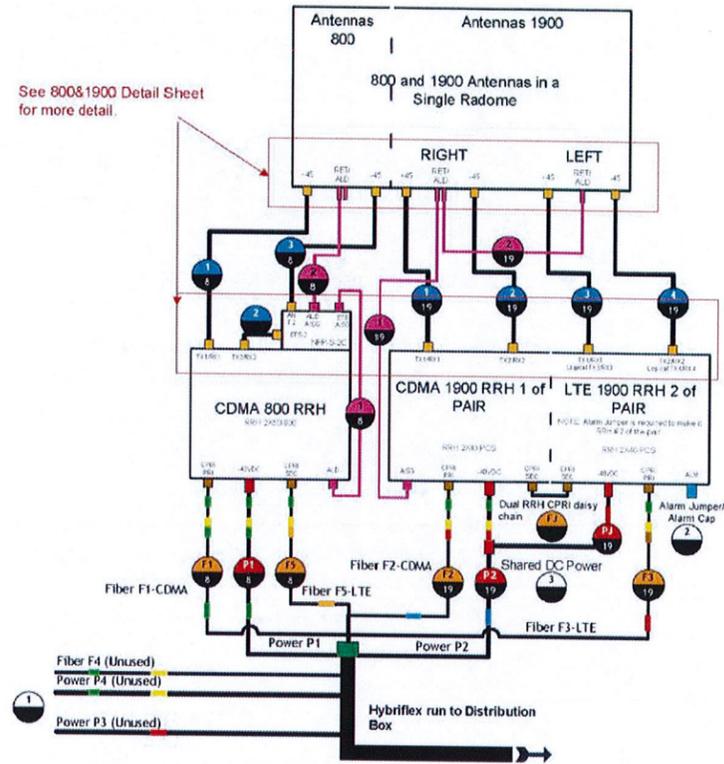
Drawing Title:
ANTENNA PLANS

Drawing Number:
C5

TOWER TOP SCENARIO 2

800 AND SINGLE 1900 RRH PAIR WITH SINGLE 800/1900 RADOME ANTENNA

See 800&1900 Detail Sheet for more detail.

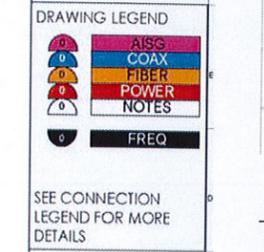
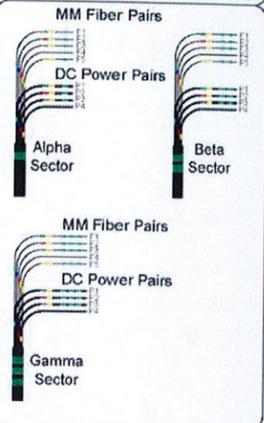


Power Feed Polarity Definition:
 Black= -48VDC Feed (Battery)
 Black/White Stripe= Return

NOTE: For power feed use the same Hybriflex OEM color designator as the fiber.

MM Pair 1= F1= Green= P1(Green)
 MM Pair 2= F2= Blue= P2(Blue)
 MM Pair 3= F3= Red= P3(Red)
 MM Pair 4= F4= Yellow= P4(Yellow)
 MM Pair 5= F5= Orange= (No P5 power feed)

OEM COLOR CODE HYBRIFLEX



SEE CONNECTION LEGEND FOR MORE DETAILS

NOTES:
 CONTRACTOR TO FIELD VERIFY GPS LOCATION.

INSTALLER VERIFY LATEST PLUMBING/WRING DIAGRAMS, PRIOR TO INSTALLATION.

PLUMBING DIAGRAM VERSION 1.9

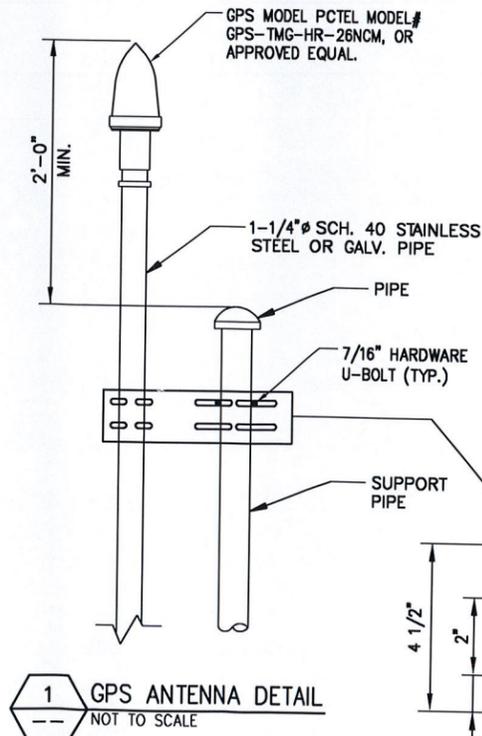
WEATHERPROOFING CONNECTORS AND GROUND KITS NOTE:

A. ALL CONNECTORS AND GROUND KITS SHALL BE WEATHERPROOFED USING BUTYL RUBBER WEATHERPROOFING AND TAPE, THIS INSTALLATION MUST BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION OR PER THE FOLLOWING INSTRUCTIONS (WHICHEVER IS GREATER):

1. THE COAXIAL CABLE CONNECTION OR GROUND KIT CAN BE ENCOMPASSED INTO COLD SHRINK AND COMPLETELY WRAPPED WITH 2 IN. WIDE ELECTRICAL TAPE OVERLAPPING EACH ROW BY APPROXIMATELY 1/2" AND EXTENDING PAST THE CONNECTION BY TWO INCHES AS DISCUSSED BELOW; OR
2. THE COAXIAL CABLE CONNECTION OR GROUND KIT CAN BE WRAPPED WITH LAYERS OR ELECTRICAL/BUTYL RUBBER/ELECTRICAL TAPE AS DISCUSSED BELOW; OR
3. THE COAXIAL CABLE CONNECTION OR GROUND KIT CAN BE WRAPPED WITH TWO LAYERS OF 1.5 INCH WIDE SELF-AMALGAMATING TAPE COVERED WITH TWO LAYERS OF ELECTRICAL TAPE.

RRH JUMPERS NOTES:

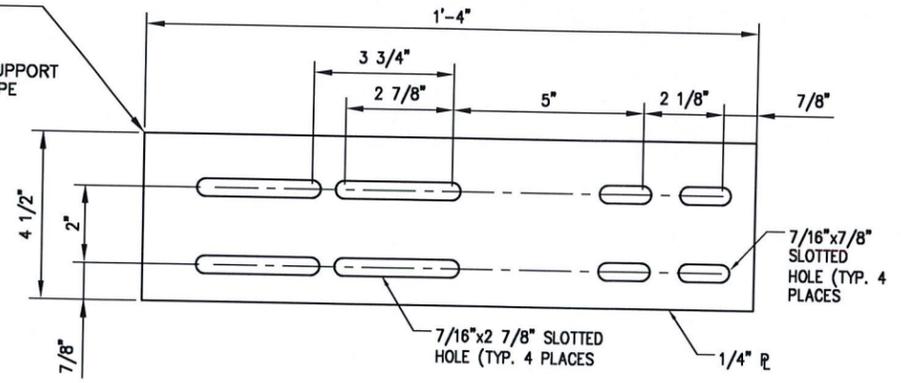
1. FOR DISTANCES BETWEEN RRH'S AND ANTENNAS LESS THAN 10'-0" USE A 1/2" JUMPER.
2. FOR DISTANCES BETWEEN RRH'S AND ANTENNAS GREATER THAN 10'-0" USE A 7/8" JUMPER.



GPS MINIMUM SKY VIEW REQUIREMENTS

NOTES:

1. THE ELEVATION AND LOCATION OF THE GPS ANTENNA SHALL BE IN ACCORDANCE WITH THE FINAL RF REPORT.
2. THE GPS ANTENNA MOUNT IS DESIGNED TO FASTEN TO A STANDARD 1-1/4" DIAMETER, SCHEDULE 40, GALVANIZED STEEL OR STAINLESS STEEL PIPE. THE PIPE SHALL BE CUT TO THE REQUIRED LENGTH USING A HAND OR ROTARY PIPE CUTTER TO ASSURE A SMOOTH AND PERPENDICULAR CUT. A HACK SAW SHALL NOT BE USED. THE CUT PIPE END SHALL BE DEBARRED AND SMOOTH IN ORDER TO SEAL AGAINST THE NEOPRENE GASKET ATTACHED TO THE ANTENNA MOUNT.
3. IT IS CRITICAL THAT THE GPS ANTENNA IS MOUNTED SUCH THAT IT IS WITHIN 2 DEGREES OF LEVEL.
4. DO NOT SWEEP TEST GPS ANTENNA.



A/E Consultant:

infinig engineering
 11 Herbert Drive
 Latham, NY 12110
 (518) 680-0790

STATE OF CONNECTICUT
 JOHN S. STEEL
 No. 24705
 LICENSED PROFESSIONAL ENGINEER

5	FINAL CD'S	EKM	2/19/13
4	REVISED PER COMMENTS	EKM	5/22/12
3	REVISED PER COMMENTS	EKM	5/4/12
2	REVISED PER COMMENTS	EKM	4/11/12
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Drawn: SKB Date: 3/16/12
 Designed: EKM Date: 3/16/12
 Checked: CM Date: 3/16/12

Project Number: 286-046

Project Title: CT33XC515 BETHANY

719 AMITY ROAD
 BETHANY, CT 06524

Client: Sprint
 Implementation Team: Alcatel-Lucent

ALCATEL-LUCENT
 808 AVIATION PARKWAY
 SUITE 100
 MORRISVILLE, NC 27650

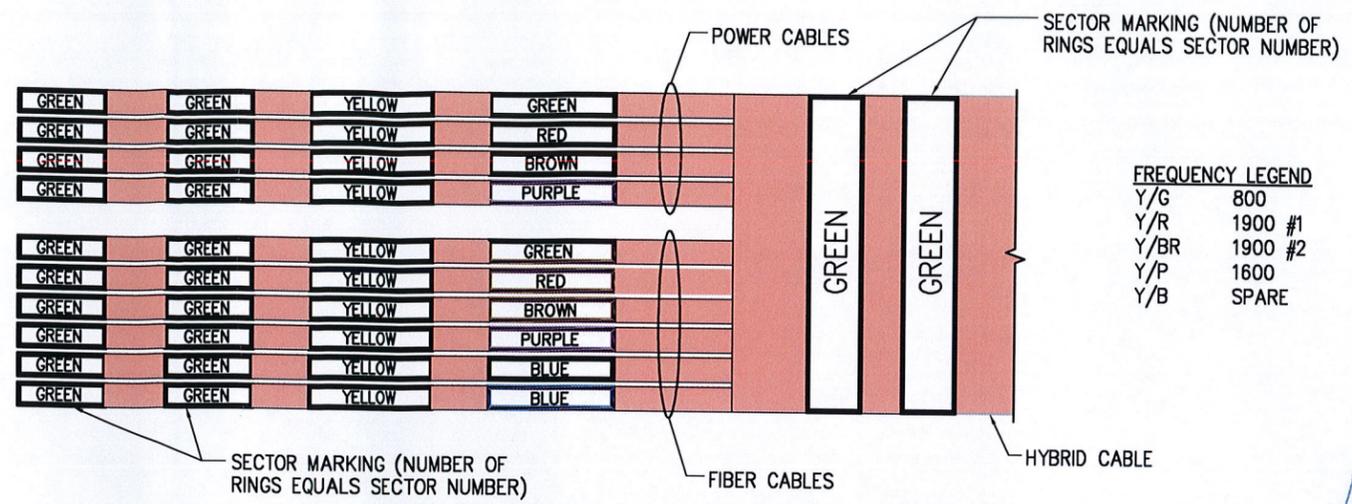
Drawing Scale: AS NOTED
 Date: 2/19/13

Drawing Title: ANTENNA CABLE RISER AND H-FRAME DETAILS

Drawing Number: C6

Market Southern Connecticut				
Cascade ID CT33XC515				
	SECTOR 1	SECTOR 2	SECTOR 3	
1900MHz_Azimuth	10	150	250	
1900_MHz_No_of_Antennas	1	1	1	
1900MHz_RADCenter(ft)	130.4	130.4	130.4	
1900MHz_Antenna Make	RFS	RFS	RFS	
1900MHz_Antenna Model	APXVSP18-C-A20	APXVSP18-C-A20	APXVSP18-C-A20	
1900MHz_Horizontal_Beamwidth	65	65	65	
1900MHz_Vertical_Beamwidth	5.5	5.5	5.5	
1900MHz_AntennaHeight (ft)	6	6	6	
1900MHz_AntennaGain(dBd)	15.9	15.9	15.9	
1900MHz_E_Tilt	-2	-2	-1	
1900MHz_M_Tilt	0	0	0	
1900_Carrier_Forecast_Year_2013	2	2	2	
1900_RRH Manufacturer	ALU	ALU	ALU	
1900_RRH Model	TBD	TBD	TBD	
1900_RRH Count	1	1	1	
1900_RRH Location	Tower-top	Tower-top	Tower-top	
1900_Combiner Model	N/A	N/A	N/A	
1900_Top_Jumper #1_Length (RRH or Combiner-to-Antenna, ft)	10	10	10	
1900_Top_Jumper_Cable_Model (RRH or Combiner-to-Antenna)	LCF12-50J	LCF12-50J	LCF12-50J	
1900_Top_Jumper #2_Length (RRH-to-Combiner, ft)	N/A	N/A	N/A	
1900_Top_Jumper #2_Cable_Model (RRH-to-Combiner)	N/A	N/A	N/A	
1900_Main_Coax_Cable_Length (ft)	N/A	N/A	N/A	
1900_Main_Coax_Cable_Model	N/A	N/A	N/A	
1900_Bottom_Jumper #1_Length (Ground-based-RRH-OR_Combiner-to-Main-Coax, ft)	N/A	N/A	N/A	
1900_Bottom_Jumper #1_Cable_Model (Ground-based-RRH-OR_Combiner-to-Main-Coax)	N/A	N/A	N/A	
1900_Bottom_Jumper #2_Length (Ground-based-Combiner-to-Main-Coax, ft)	N/A	N/A	N/A	
1900_Bottom_Jumper #2_Cable_Model (Ground-based-Combiner-to-Main-Coax)	N/A	N/A	N/A	
800MHz_Azimuth	10	150	250	
800_MHz_No_of_Antennas	0	0	0	
800MHz_RADCenter(ft)	130.4	130.4	130.4	
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_Beamwidth	65	65	65	
800MHz_Vertical_Beamwidth	11.5	11.5	11.5	
800MHz_AntennaHeight (ft)	6	6	6	
800MHz_AntennaGain (dBd)	13.4	13.4	13.4	
800MHz_E_Tilt	-7	-6	-8	
800MHz_M_Tilt	0	0	0	
800_RRH Manufacturer	ALU	ALU	ALU	
800_RRH Model	TBD	TBD	TBD	
800_RRH Count	1	1	1	
1900_RRH Location	Tower-top	Tower-top	Tower-top	
800_Top_Jumper #1_Length (RRH or Combiner-to-Antenna, ft)	10	10	10	
800_Top_Jumper_Cable_Model (RRH or Combiner-to-Antenna)	LCF12-50J	LCF12-50J	LCF12-50J	
800_Main_Coax_Cable_Length (ft)	N/A	N/A	N/A	
800_Main_Coax_Cable_Model	N/A	N/A	N/A	
800_Bottom_Jumper #1_Length (Ground-based-RRH-Main-Coax, ft)	N/A	N/A	N/A	
800_Bottom_Jumper #1_Cable_Model (Ground-based-RRH-OR_Combiner-to-Main-Coax)	N/A	N/A	N/A	

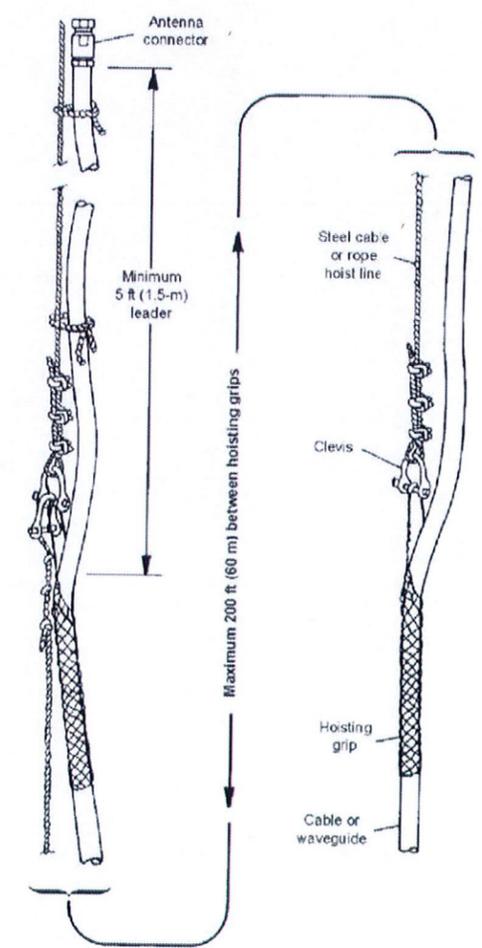
1 SPRINT RFDS
NOT TO SCALE



HYBRID CABLE WILL BE MARKED IN A SIMILAR MANNER AS COAX CABLES. THE MAIN TRUNK OF THE HYBRID CABLE IS TO BE MARKED WITH THE SECTOR MARKINGS ONLY. THE INDIVIDUAL POWER PAIRS AND FIBER CABLES WILL BE LABELED WITH BOTH THE SECTOR CABLE MARKINGS AND FREQUENCY (EXAMPLE ABOVE IS FOR SECTOR 2)

2 COLOR CODING
NOT TO SCALE

- DO NOT USE ONE HOISTING GRIP FOR HOISTING TWO OR MORE CABLES OR ICE BRIDGES. THIS CAN CAUSE THE HOISTING GRIP TO BREAK OR THE CABLES OR WAVEGUIDES TO FALL.
- DO NOT USE THE HOISTING GRIP FOR LOWERING CABLE OR ICE BRIDGE. SNAGGING OF THE CABLE OR ICE BRIDGE MAY LOOSEN THE GRIP AND POSSIBLY CAUSE THE CABLE TO ICE BRIDGE TO SWAY OR FALL.
- DO NOT REUSE HOISTING GRIPS. USED GRIPS MAY HAVE LOST ELASTICITY, STRETCHED, OR BECOME WEAKENED. REUSING A GRIP CAN CAUSE THE CABLE OR ICE BRIDGE TO SLIP, BREAK, OR FALL.
- USE HOISTING GRIPS AT INTERVALS OF NO MORE THAN 200 FT (60 M).
- MAKE SURE THAT THE PROPER HOISTING GRIP IS USED FOR THE CABLE OR ICE BRIDGE BEING INSTALLED. SLIPPAGE OR INSUFFICIENT GRIPPING STRENGTH WILL RESULT IF YOU ARE USING THE WRONG HOISTING GRIP.



2 HOIST GRIP DETAIL
NOT TO SCALE

NOTE:
COORDINATE RF ANTENNA INSTALLATION WITH FINAL SPRINT RFDS. COORDINATE RF MW DISH (IF APPLICABLE) INSTALLATION WITH FINAL SPRINT RFDS.

NOTE:
RFDS SHOWN PROVIDED BY SPRINT DATED 12/07/11.

A/E Consultant:

infini engineering
11 Herbert Drive
Latham, NY 12110
(518) 680-0790



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5	FINAL CD'S	EKM	2/19/13
4	REVISED PER COMMENTS	EKM	5/22/12
3	REVISED PER COMMENTS	EKM	5/4/12
2	REVISED PER COMMENTS	EKM	4/11/12
1	REVISED PER COMMENTS	EKM	4/05/12
0	ISSUED FOR REVIEW	SKB	3/16/12

Drawn: SKB Date: 3/16/12
Designed: EKM Date: 3/16/12
Checked: CMW Date: 3/16/12

Project Number 286-046

Project Title
CT33XC515
BETHANY

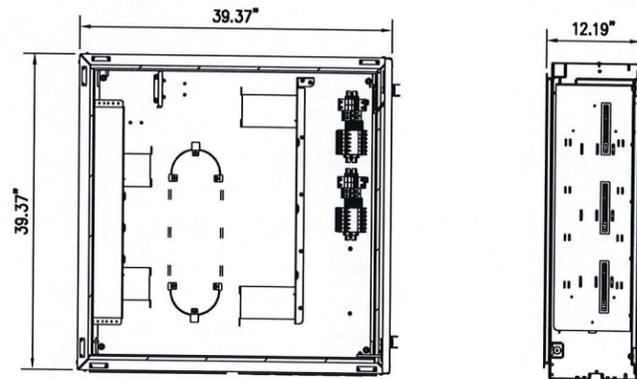
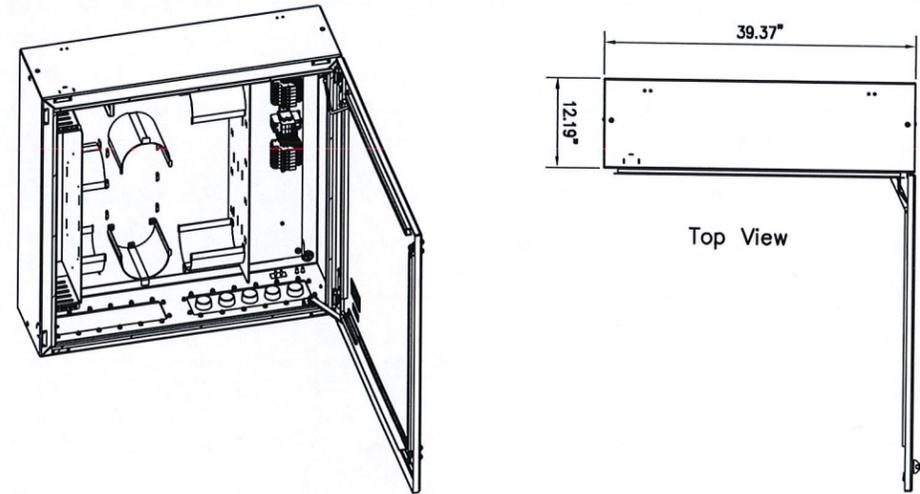
719 AMITY ROAD
BETHANY, CT 06524

Client: **Sprint**
Implementation Team: **ALCATEL-LUCENT**
808 AVIATION PARKWAY
SUITE 700
MORRISTVILLE, NC 27660

Drawing Scale: AS NOTED
Date: 2/19/13

Drawing Title
RF AND CABLE DETAILS

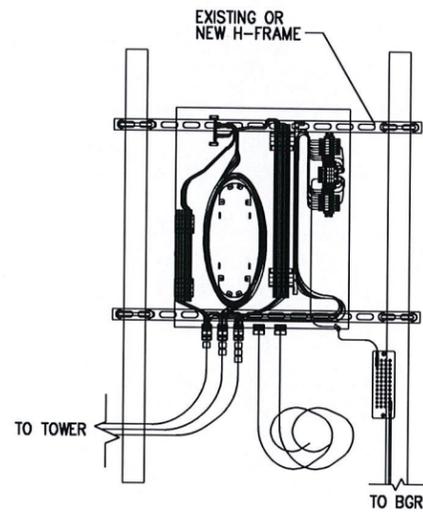
Drawing Number
C7



Front View

Side View

1 DISTRIBUTION BOX DETAIL
NOT TO SCALE



Front View with door removed to show detail

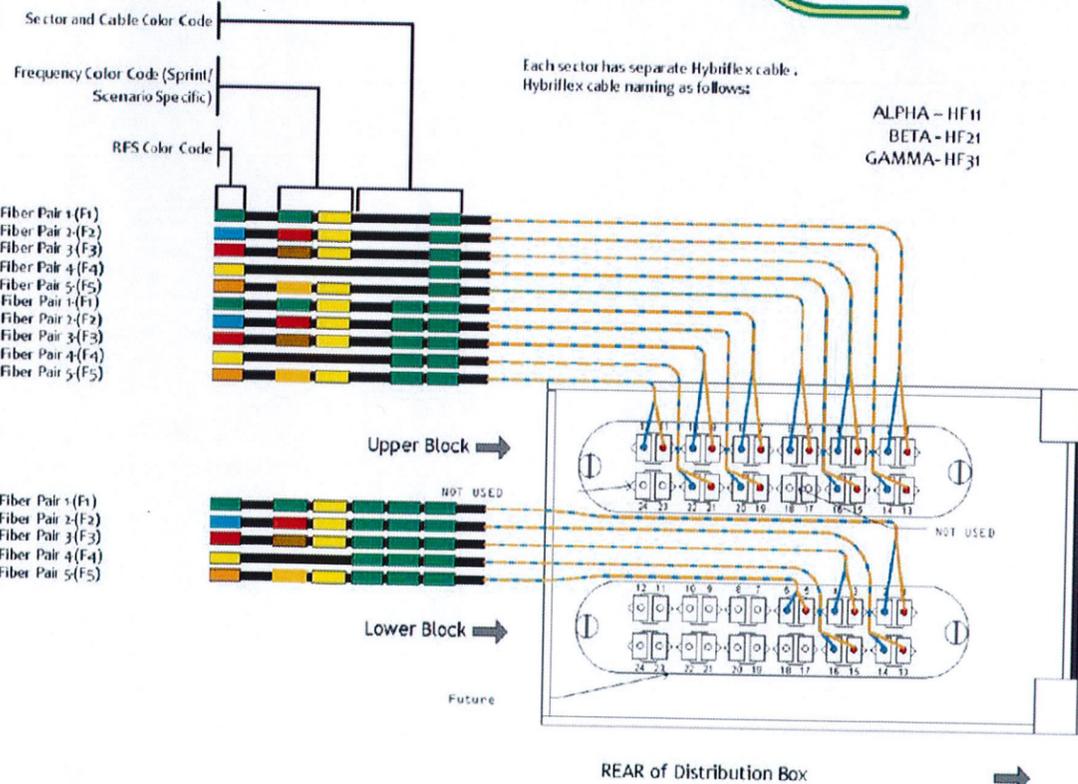
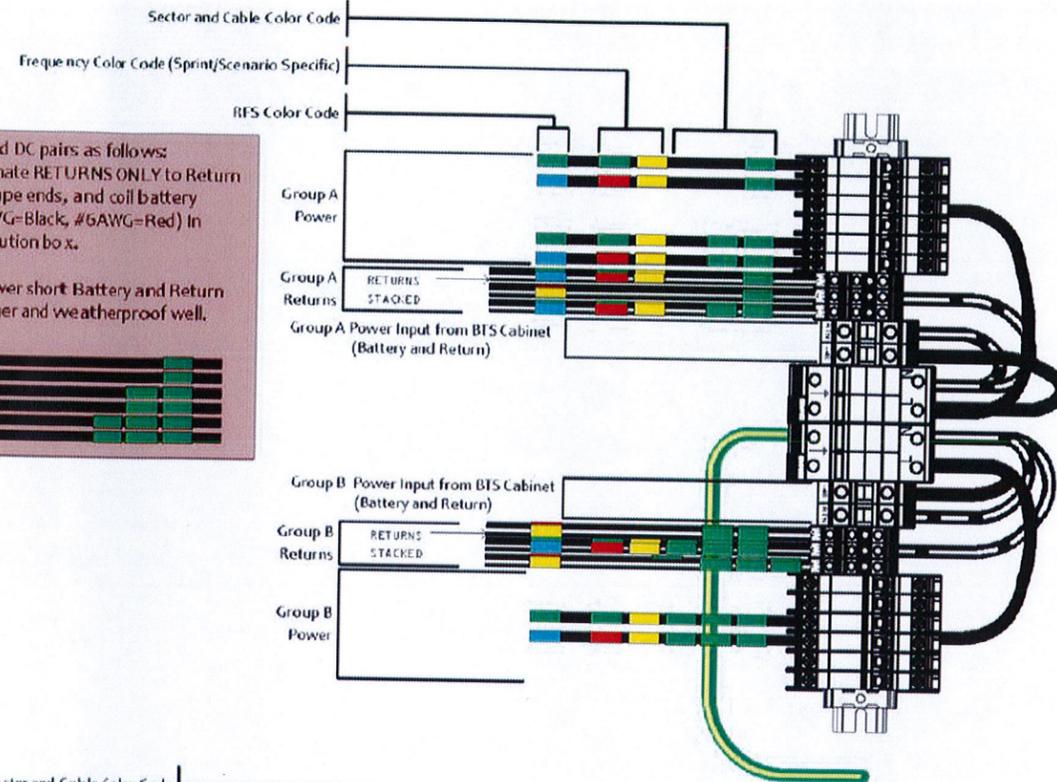
2 DISTRIBUTION BOX INSTALL COMPLETE VIEW
NOT TO SCALE

NOTES:

- DISTRIBUTION BOX IS KITTED WITH 2" LIQUID-TIGHT CONDUIT AND CONNECTORS. THIS SHOULD BE:
 - * SPLIT IN HALF,
 - * TERMINATED TO THE DISTRIBUTION BOX AS SHOWN,
 - * RAN TO AND COILED AS CLOSE TO WHERE THE CABINET IS GOING TO BE MOUNTED AS POSSIBLE.
- DISTRIBUTION BOX IS KITTED WITH 24AWG, POWER CABLE 27' x 2EA. RUNS RED AND 2EA. RUNS BLACK. THIS SHOULD BE COILED AND LEFT INSIDE DISTRIBUTION BOX.
- BTS INSTALLATION TEAM WILL TERMINATE LIQUID-TIGHT, RUN THE FIBER JUMPERS AND POWER CABLES FROM BTS CABINET TO DISTRIBUTION BOX.

Unused DC pairs as follows:
Terminate RETURNS ONLY to Return bar. Tape ends, and coil battery (#8AWG=Black, #6AWG=Red) in distribution box.

On tower short Battery and Return together and weatherproof well.



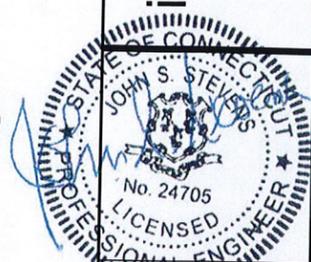
INSTALLER VERIFY LATEST PLUMBING/WIRING DIAGRAMS, PRIOR TO INSTALLATION.

3 FIBER & DC CONNECTION DETAILS
NOT TO SCALE

PLUMBING DIAGRAM VERSION 1.9

A/E Consultant:

infinigy
engineering
11 Herbert Drive
Latham, NY 12110
(518) 680-0790



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0	ISSUED FOR REVIEW	SKB	3/16/12

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Designed: EKM Date: 3/16/12
Checked: CM Date: 3/16/12

Project Number: 286-046

Project Title:
CT33XC515
BETHANY

719 AMITY ROAD
BETHANY, CT 06524

Client: **Sprint**
INTERNATIONAL, INC.
1 MARLBOROUGH, MA 01801

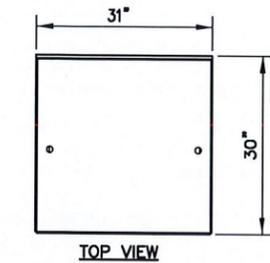
Implementation Team:
ALCATEL-LUCENT
808 AVIATION PARKWAY
SUITE 400
MORRISVILLE, NC 27650

Drawing Scale:
AS NOTED

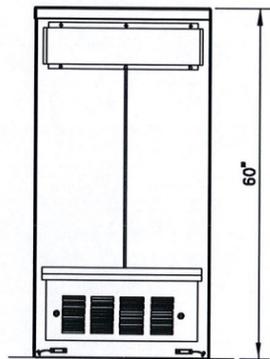
Date:
2/19/13

Drawing Title:
JUNCTION BOX DETAILS

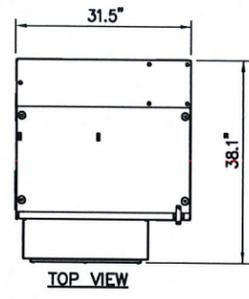
Drawing Number:
C8



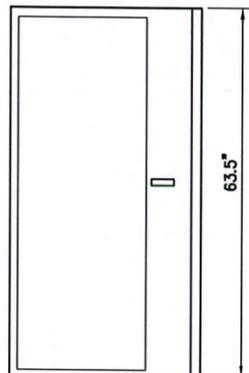
TOP VIEW



REAR VIEW



TOP VIEW



FRONT VIEW

1 BATTERY CABINET PROFILE
NOT TO SCALE

2 CABINET PROFILE
NOT TO SCALE

DESIGN CRITERIA:	
2009 INTERNATIONAL BUILDING CODE W/ STATE MODIFICATION	
WIND SPEED (ASCE-7-05)	90 MPH
EXPOSURE B	
IMPORTANCE FACTOR	1.0
SEISMIC SITE CLASS	D
S _s =0.152	S' = 0.050
SEISMIC IMPORTANCE FACTOR	1.0
SEISMIC DESIGN CATEGORY	B
CABINET WEIGHT:	
9927 MM BTS CABINET	594 lbs.
60EC V2 BATTERY CABINET	2830 lbs.
MATERIAL SPECIFICATIONS	
C-, M-, AND ANGLE SHAPES:	ASTM A36
HIGH-STRENGTH BOLTS:	ASTM A325SC OR (A325N)
STRUCTURAL WF SHAPES:	ASTM A572-GR50
TUBE STEEL & PIPE COLUMNS:	ASTM A500, GRADE B
WELDING ELECTRODES:	E70XX
W - SHAPES:	ASTM A992, GRADE 50
U-BOLTS:	ASTM A36

SUPPORT POST + BRACKET FOR 27" CHANNEL
(3-9" PART #802225 (PIROD INC OR EQUAL) USE
PART #150410 FOR POST WITH 12" Ø WELDED
FLANGE + BOLT HOLES. CUT POST LENGTH TO
SUIT OR ORDER APPROPRIATE LENGTH

27" ICE BRIDGE 3-9" CHANNEL x 10'
PART # 124470 (PIROD INC. OR
EQUAL) CUT ICE BRIDGE CHANNEL
LENGTH TO SUIT (SEE NOTE)

1-1/4" HYBRIFLEX CABLE

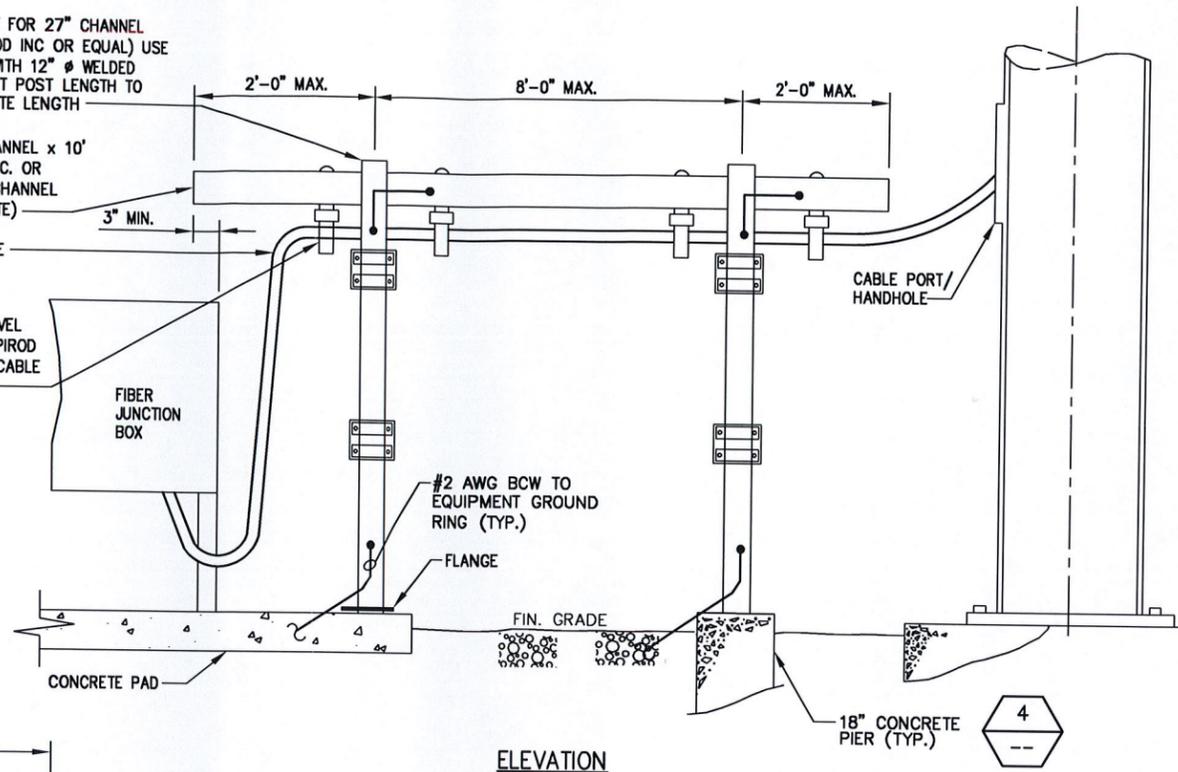
HANGER BRACKET TYPE LEVEL
CHANNEL PART #802257 (PIROD
INC OR EQUAL). MAXIMUM CABLE
SPAN = 3' TYP.

FIBER
JUNCTION
BOX

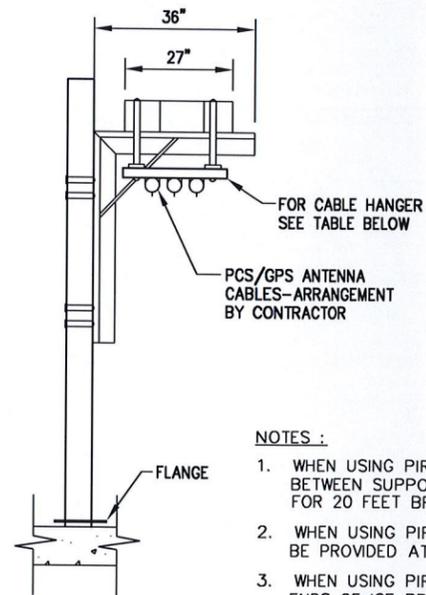
#2 AWG BCW TO
EQUIPMENT GROUND
RING (TYP.)

FLANGE

CABLE PORT/
HANDHOLE



ELEVATION



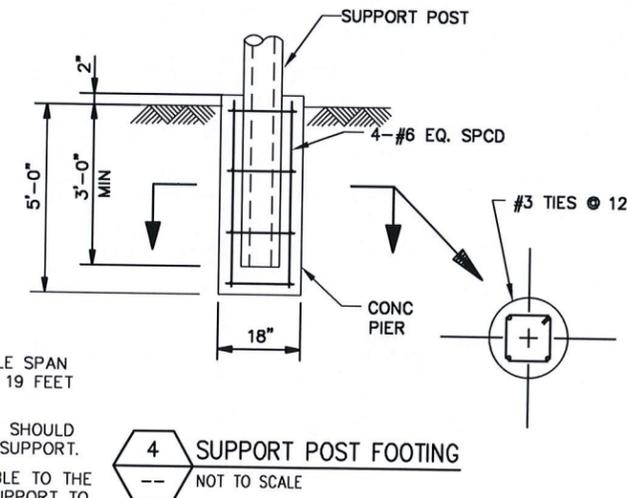
SECTION

NOTE:
CONTRACTOR TO SUPPORT HYBRIFLEX
CABLING IN ACCORDANCE WITH
MANUFACTURER'S SPECIFICATIONS.

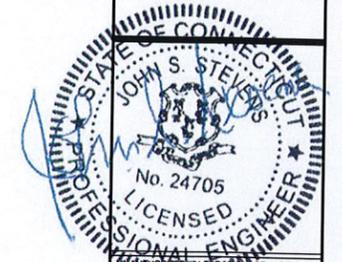
NOTES:

1. WHEN USING PIROD COMPONENTS AS SHOWN IN STANDARD DETAILS, MAXIMUM ALLOWABLE SPAN BETWEEN SUPPORTS ON A CONTINUOUS SINGLE SECTION OF BRIDGE CHANNEL SHALL BE 19 FEET FOR 20 FEET BRIDGE CHANNEL, OR 9 FEET FOR 10 FEET BRIDGE CHANNEL.
2. WHEN USING PIROD COMPONENTS FOR SPLICING BRIDGE CHANNEL SECTIONS, THE SPLICE SHOULD BE PROVIDED AT THE SUPPORT, IF POSSIBLE, OR AT A MAXIMUM OF 2 FEET FROM THE SUPPORT.
3. WHEN USING PIROD COMPONENTS, SUPPORT SHOULD BE PROVIDED AS CLOSE AS POSSIBLE TO THE ENDS OF ICE BRIDGES, WITH A MAXIMUM CANTILEVER DISTANCE OF 2 FEET FROM THE SUPPORT TO THE FREE END OF THE ICE BRIDGE.
4. CUT BRIDGE CHANNEL SECTIONS SHOULD HAVE RAW EDGES TREATED WITH A MATERIAL TO RESTORE THE EDGES TO THE ORIGINAL CHANNEL, OR EQUIVALENT, FINISH.
5. ICE BRIDGES MAY BE CONSTRUCTED WITH COMPONENTS FROM MANUFACTURERS OTHER THAN PIROD, PROVIDED THE MANUFACTURER'S INSTALLATION GUIDELINES ARE FOLLOWED.
6. DEVIATIONS FROM STANDARDS FOR COMPONENT INSTALLATIONS ARE PERMITTED WITH THE RESPECTIVE MANUFACTURER'S APPROVAL.
7. ATTACH FLANGED END OF SUPPORT POST TO CONCRETE PAD USING 4 - 3/8" DIA. HILT-HY 150 ADHESIVE ANCHORS. PROVIDE MINIMUM OF 1/2" EMBEDMENT.
8. DEVIATIONS FROM ICE BRIDGE FOUNDATIONS SHOWN ON SITE SPECIFIC DRAWINGS OR STANDARD DETAILS REQUIRE ENGINEERING APPROVAL.

3 ICE BRIDGE
NOT TO SCALE



4 SUPPORT POST FOOTING
NOT TO SCALE



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1	REVISED PER COMMENTS	EKM	4/05/12
0	ISSUED FOR REVIEW	SKB	3/16/12

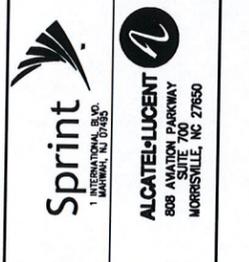
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Checked: CW Date: 3/16/12

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BETHANY

719 AMITY ROAD
BETHANY, CT 06524

Client: Sprint
Implementation Team:



Drawing Scale:
AS NOTED
Date:
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Drawing Title

DETAILS

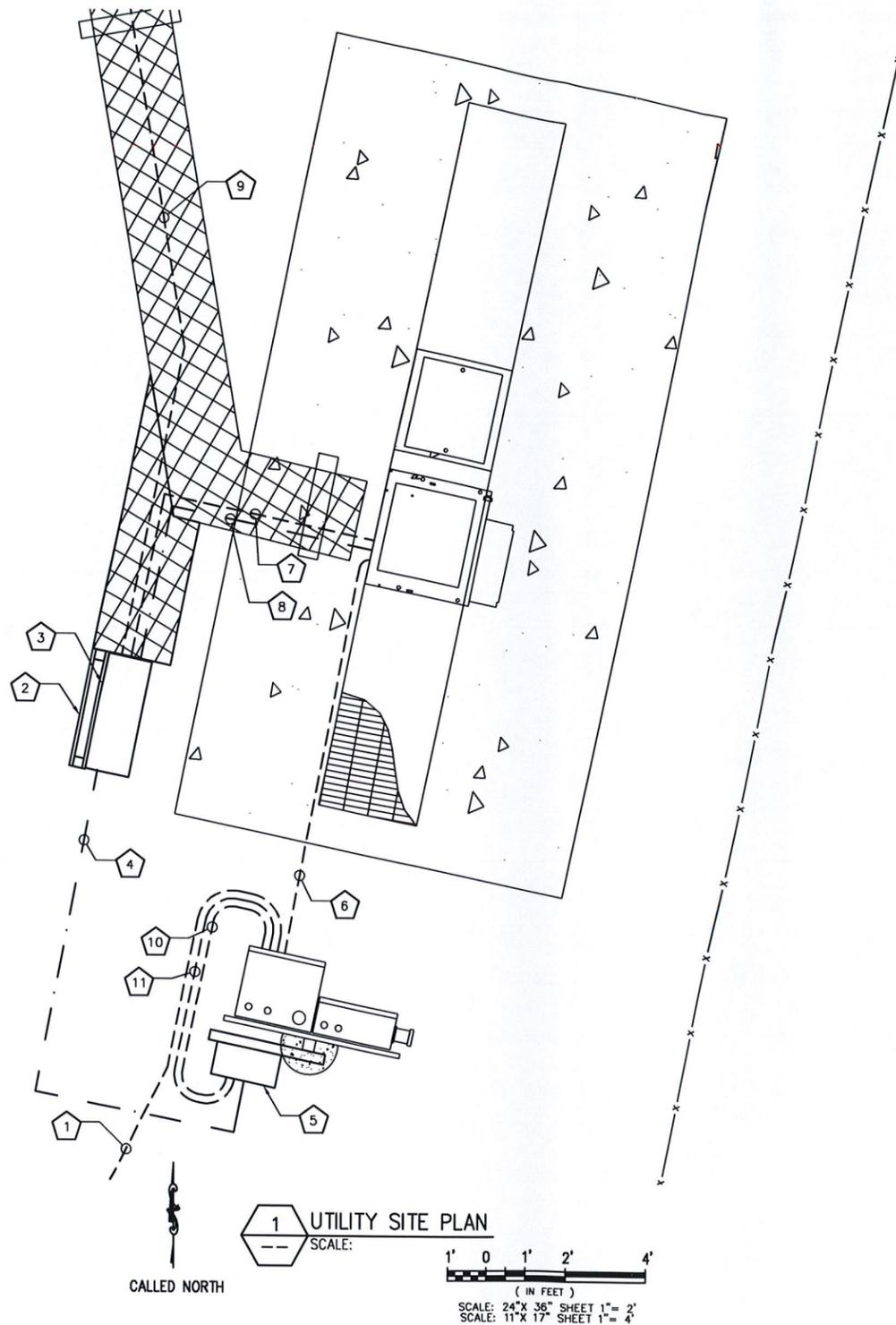
Drawing Number
C9

A/E Consultant:

infinigy
engineering
11 Herbert Drive
Latham, NY 12110
(518) 680-0790

CODED NOTES:

- 1 SPRINT TO PROVIDE PULL STRING IN EXISTING 2" UNDERGROUND GRC CONDUIT FROM EXISTING HOFFMAN BOX TO EXISTING SPRINT PPC (TELCO), 35'
- 2 PROPOSED H-FRAME FURNISHED AND INSTALLED BY SPRINT
- 3 PROPOSED SPRINT FIBER JUNCTION BOX FURNISHED AND INSTALLED BY ALU
- 4 PROPOSED 1-1/4" UNDERGROUND PVC CONDUIT WITH PULL-STRING FROM PROPOSED JUNCTION BOX TO PROPOSED CIENA EQUIPMENT LOCATION FOR DC POWER, 20'; FURNISHED AND INSTALLED BY SPRINT
- 5 PROPOSED CIENA EQUIPMENT ENCLOSURE, FURNISHED AND INSTALLED BY AT&T
- 6 PROPOSED TELCO CABLE ROUTED IN EXISTING 2-1/2" UNDERGROUND GRC CONDUIT FROM EXISTING SPRINT PPC (TELCO) ENCLOSURE TO EXISTING BTS CABINET, 25' FURNISHED AND INSTALLED BY SPRINT
- 7 PROPOSED 1-1/2" LIQUID TIGHT CONDUIT WITH PULL-STRING FOR FIBER FROM FIBER JUNCTION BOX TO LUCENT EQUIPMENT CABINET
- 8 PROPOSED 1-1/2" LIQUID TIGHT FLEX CONDUIT WITH PULL-STRING FOR DC POWER FROM FIBER JUNCTION BOX TO LUCENT EQUIPMENT CABINET
- 9 PROPOSED 1-1/4" HYBRIFLEX CABLE ROUTED FROM PROPOSED JUNCTION BOX TO PROPOSED TOWER MOUNTED RRH, 185' (TYP. OF (1) PER SECTOR, (3) SECTORS TOTAL)
- 10 PROPOSED 1-1/4" ABOVE GROUND LIQUID TIGHT CONDUIT FROM PROPOSED CIENA ENCLOSURE TO EXISTING SPRINT PPC (TELCO), 5' FURNISHED AND INSTALLED BY SPRINT
- 11 PROPOSED 1-1/4" ABOVE GROUND LIQUID TIGHT CONDUIT FROM PROPOSED CIENA ENCLOSURE TO EXISTING SPRINT PPC (TELCO), 5' FURNISHED AND INSTALLED BY SPRINT



1 UTILITY SITE PLAN
SCALE:

1" = 2'
SCALE: 24" X 36" SHEET 1" = 2'
SCALE: 11" X 17" SHEET 1" = 4'

NOTES:

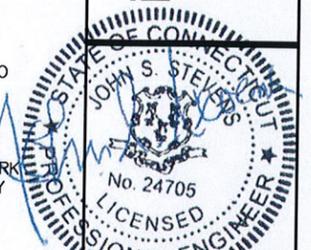
1. CONTRACTOR TO USE EXISTING SPARE CONDUITS, IF AVAILABLE. CONDUIT SIZES MUST BE EQUAL TO OR GREATER THAN THAT ALLOWED BY CODE.
2. EXISTING ALARMS NEED TO BE RE-ROUTED AND VERIFIED IN PROPER WORKING CONDITION WHEN NEW MMBTS EQUIPMENT IS INSTALLED.
3. REMAINING GROUND LEADS FROM REMOVED CABINETS TO BE COILED (NOT ON WALKING SURFACE).
4. REMAINING UNUSED CONDUITS FROM EXISTING CABINETS TO BE COVERED WITH WATERPROOF CAPS (NOT DUCT TAPE).

ELECTRICAL NOTES:

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (N.E.C.), AND APPLICABLE LOCAL CODES.
2. GROUNDING SHALL COMPLY WITH ARTICLE 250 OF NATIONAL ELECTRICAL CODE.
3. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED.
4. ALL WIRES SHALL BE AWG MIN #12 THHN COPPER UNLESS NOTED.
5. CONDUCTORS SHALL BE INSTALLED IN SCHEDULE 40 PVC CONDUIT UNLESS NOTED OTHERWISE.
6. LABEL SPRINT SERVICE DISCONNECT SWITCH AND PPC CABINET WITH ENGRAVED LAMACOID LABELS, LETTERS 1" IN HEIGHT.
7. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE. BEND GROUNDING LEADS WITH A MINIMUM 8" RADIUS.
8. ENGAGE AN INDEPENDENT TESTING FIRM TO TEST AND VERIFY THAT RESISTANCE DOES NOT EXCEED 5 OHMS TO GROUND. TEST GROUND RING RESISTANCE PRIOR TO MAKING FINAL GROUND CONNECTIONS TO INFRASTRUCTURE AND EQUIPMENT. GROUNDING AND OTHER OPERATIONAL TESTING SHALL BE WITNESSED BY SPRINTS REPRESENTATIVE.
9. PROVIDE PULL BOXES AND JUNCTION BOXES WHERE REQUIRED SO THAT CONDUIT BENDS DO NOT EXCEED 360°.
10. OBTAIN PERMITS AND PAY FEES RELATED TO ELECTRICAL WORK PERFORMED ON THIS PROJECT. DELIVER COPIES OF ALL PERMITS TO SPRINT REPRESENTATIVE.
11. SCHEDULE AND ATTEND INSPECTIONS RELATED TO ELECTRICAL WORK REQUIRED BY JURISDICTION HAVING AUTHORITY. CORRECT AND PAY FOR ANY WORK REQUIRED TO PASS ANY FAILED INSPECTION.
12. REDLINED AS-BUILTS ARE TO BE DELIVERED TO SPRINT REPRESENTATIVE.
13. PROVIDE TWO COPIES OF OPERATION AND MAINTENANCE MANUALS IN THREE-RING BINDER.
14. FURNISH AND INSTALL THE COMPLETE ELECTRICAL SERVICE, TELCO CONDUIT, AND THE COMPLETE GROUNDING SYSTEM.
15. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ALL APPLICABLE BUILDING CODES AND LOCAL ORDINANCES, INSTALLED IN A NEAT MANNER, AND SHALL BE SUBJECT TO APPROVAL BY SPRINT REPRESENTATIVE.
16. CONDUCT A PRE-CONSTRUCTION SITE VISIT AND VERIFY EXISTING SITE CONDITIONS AFFECTING THIS WORK. REPORT ANY OMISSIONS OR DISCREPANCIES FOR CLARIFICATION PRIOR TO THE START OF CONSTRUCTION.
17. PROJECT ADJACENT STRUCTURES AND FINISHES FROM DAMAGE. REPAIR TO ORIGINAL CONDITION ANY DAMAGED AREA.
18. REMOVE DEBRIS ON A DAILY BASIS. DEBRIS NOT REMOVED IN A TIMELY FASHION WILL BE REMOVED BY OTHERS AND THE RESPONSIBLE SUBCONTRACTOR SHALL BE CHARGED ACCORDINGLY. REMOVAL OF DEBRIS SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE. DEBRIS SHALL BE REMOVED FROM THE PROPERTY AND DISPOSED OF LEGALLY.
19. UPON COMPLETION OF WORK, THE SITE SHALL BE CLEAN AND FREE OF DUST AND FINGERPRINTS.
20. PRIOR TO ANY TRENCHING, CONTACT LOCAL UTILITY TO VERIFY LOCATION OF ANY EXISTING BURIED SERVICE CONDUITS.
21. DOCUMENT GROUND RING INSTALLATION AND CONNECTIONS TO IT WITH PHOTOGRAPHS PRIOR TO BACKFILLING SITE. PRESENT PHOTO ARCHIVE AT SITE "PUNCH LIST" WALK TO SPRINT'S REPRESENTATIVE.
22. ALL ABOVE GRADE CONDUIT TO BE RIGID METALLIC.

A/E Consultant:

infinig
engineering
11 Herbert Drive
Latham, NY 12110
(518) 680-0790



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No.	Submittal / Revision	App'd	Date
5	FINAL CD'S	EKM	2/19/13
4	REVISED PER COMMENTS	EKM	5/22/12
3	REVISED PER COMMENTS	EKM	5/4/12
2	REVISED PER COMMENTS	EKM	4/11/12
1	REVISED PER COMMENTS	EKM	4/05/12
0	ISSUED FOR REVIEW	SKB	3/16/12

Drawn: SKB Date: 3/16/12
Designed: EKM Date: 3/16/12
Checked: C.W. Date: 3/16/12

Project Number: 286-046

Project Title:
**CT33XC515
BETHANY**

719 AMITY ROAD
BETHANY, CT 06524

Client: SPRINT
Implementation Team: ALCATEL-LUCENT



Drawing Scale: AS NOTED

Date: 2/19/13

Drawing Title:
**UTILITY
SITE PLAN**

Drawing Number:

E1

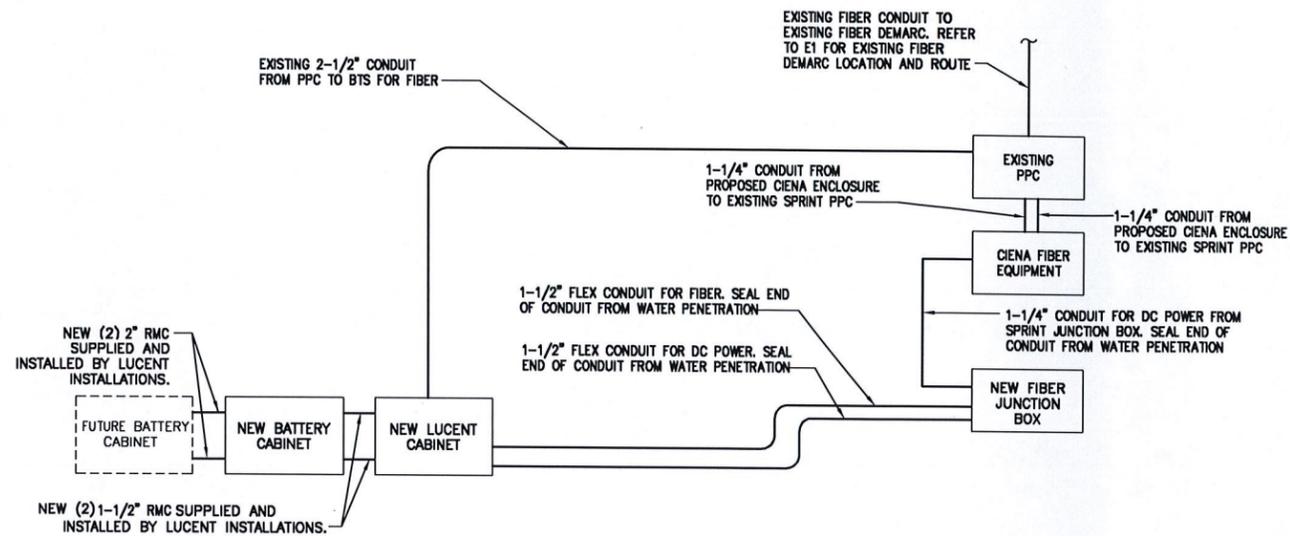


UNDERGROUND
SERVICE ALERT
CALL TOLL FREE
1-800-922-4455

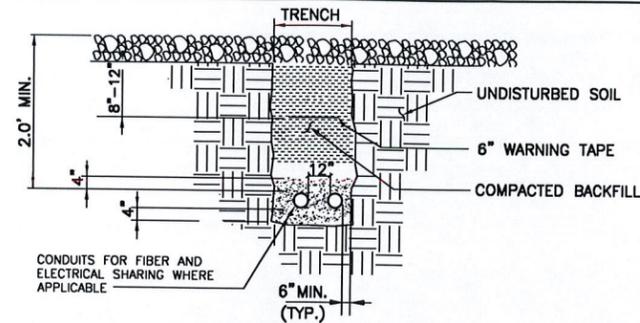
THREE WORKING DAYS BEFORE YOU DIG

GROUNDING NOTE:

IN ADDITION TO POWER SERVICE GROUNDING AS REQUIRED BY NEC, CONTRACTOR SHALL BE RESPONSIBLE TO COORD AND INSTALL ALL SURGE AND LIGHTING PROTECTION GROUNDING AS REQUIRED AND SPECIFIED BY SPRINT

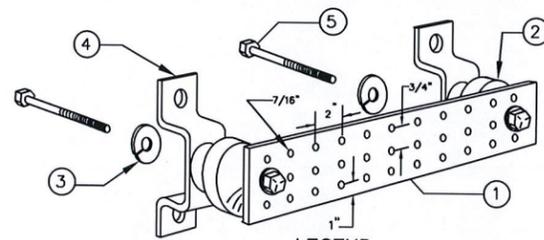


1 ONE-LINE DIAGRAM
NOT TO SCALE



- SEPARATION DIMENSIONS MUST BE VERIFIED WITH LOCAL UTILITY CO. REQUIREMENTS.
*HAND DIG INSIDE COMPOUND

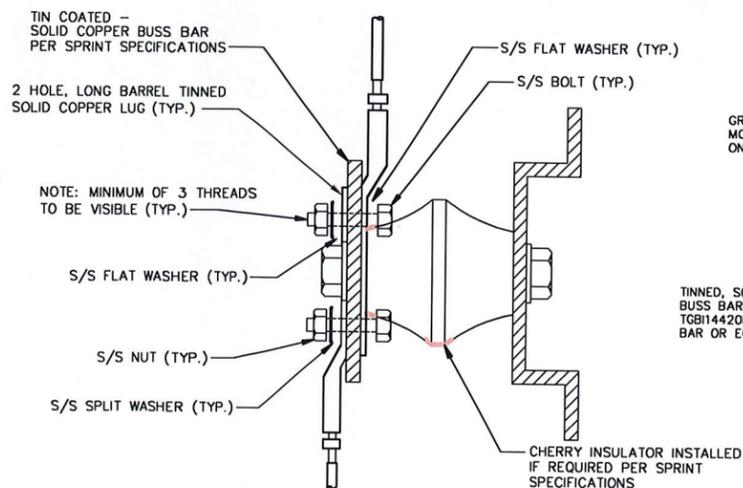
2 UTILITY TRENCH DETAIL
NOT TO SCALE



- LEGEND**
1. TINNED COPPER GROUND BAR, 1/2" x 4" x 20", NEWTON INSTRUMENT Co., HARGER TGB114420M, OR EQUIVALENT. HOLE CENTERS TO MATCH
 2. NEMA DOUBLE LUG CONFIGURATION.
 3. INSULATORS, NEWTON INSTRUMENT Co. CAT. NO. 3061-4 OR HARGER EQUIVALENT.
 4. EQUIVALENT.
 5. 5/8" LOCKWASHERS, NEWTON INSTRUMENT Co. CAT. NO. 3015-8 OR EQUIVALENT.
- WALL MOUNTING BRACKET, NEWTON INSTRUMENT Co. CAT. NO. A-6056 OR HARGER EQUIVALENT.
5/8-11 x 1" H.H.C.S. BOLTS, NEWTON INSTRUMENT Co. CAT. NO. 3012-1 OR HARGER EQUIVALENT.

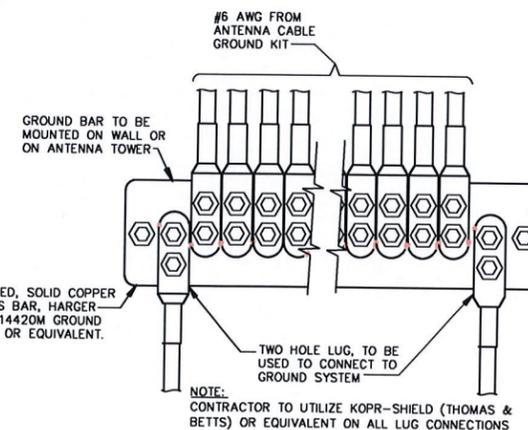
NOTE:
1) ALL MOUNTING HARDWARE CAN ALSO BE USED ON 6", 12", 18", ETC. GROUND BARS.
2) ENTIRE ASSEMBLY AVAILABLE FROM NEWTON INSTRUMENT Co. CAT. NO. 2106060010 OR AS HARGER TGB114420M.

GROUND BAR



- NOTES:**
- 1) ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING SPLIT WASHERS.
 - 2) COAT WIRE END WITH ANTI-OXIDATION COMPOUND PRIOR TO INSERTION INTO LUG BARREL AND CRIMPING.
 - 3) APPLY ANTI-OXIDATION COMPOUND BETWEEN ALL LUGS AND BUSS BARS PRIOR TO MATING AND BOLTING.

GROUND LUG



ANTENNA GROUND BAR

3 GROUND BAR DETAILS
NOT TO SCALE



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Designed: EKM Date: 3/28/12
Checked: CW Date: 3/16/12

Project Number: 286-046

Project Title: CT33XC515 BETHANY

719 AMITY ROAD BETHANY, CT 06524

Client: SPRINT
Implementation Team: ALCATEL-LUCENT
800 AVAMTON PARKWAY SUITE 700 MORRISVILLE, NC 27660

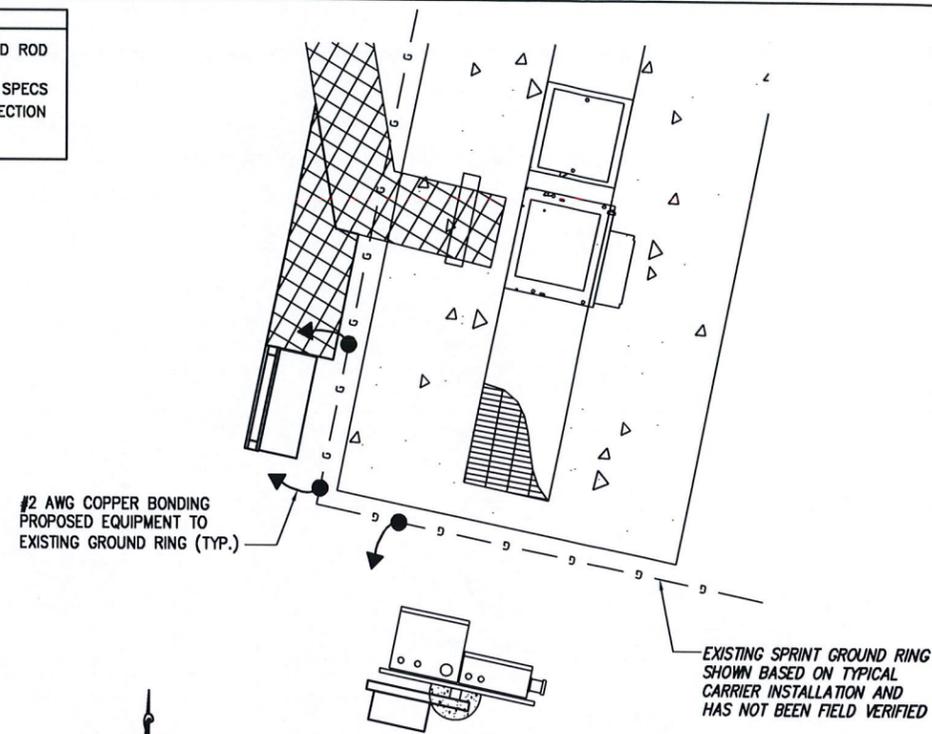
Drawing Scale: AS NOTED
Date: 2/19/13

ONE-LINE DIAGRAM AND DETAILS

Drawing Number: E2

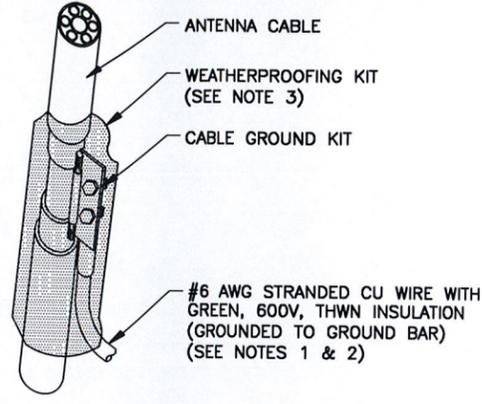
A/E Consultant:
infiniting engineering
11 Herbert Drive
Latham, NY 12110
(518) 690-0790

SYMBOL	
⊗	COPPER GROUND ROD
▶	CONNECT PER MANUFACTURER SPECS
●	CADWELD CONNECTION
—	GROUND BAR

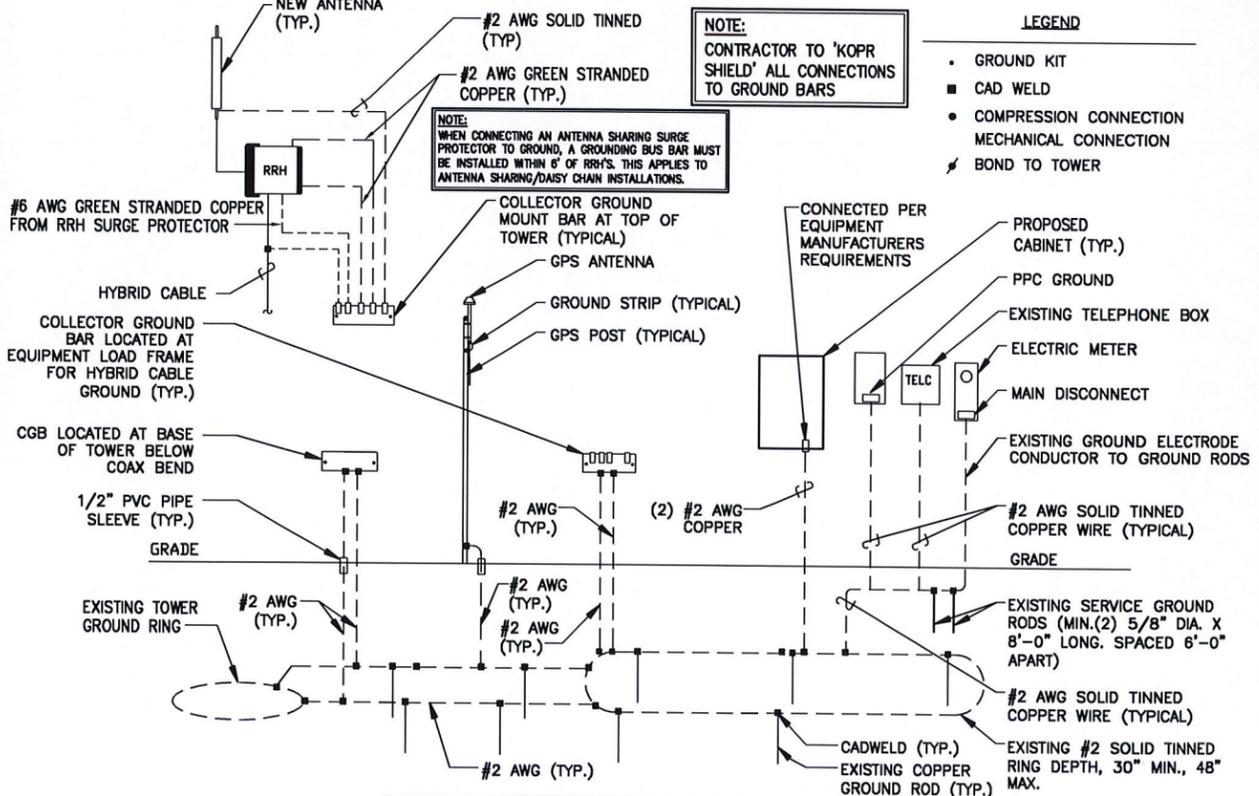


1 EQUIPMENT GROUNDING PLAN
NOT TO SCALE

- NOTES:**
- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
 - GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
 - WEATHERPROOFING SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.



3 CONNECTION OF GROUND KIT TO ANTENNA CABLE
NOT TO SCALE



NOTE:
DIAGRAM FOR GRAPHICAL PURPOSES ONLY. REFER ACTUAL SITE LAYOUT AND RF PAGES FOR ADDITIONAL INFORMATION

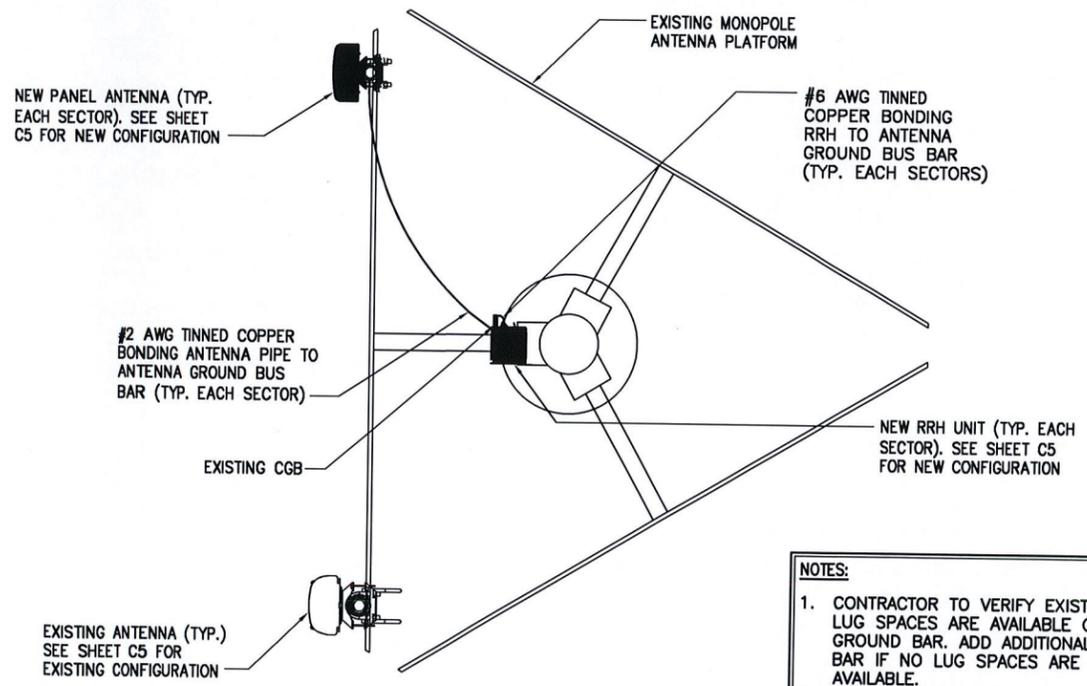
NOTE:
ALL GROUND WIRES ENTERING GROUND SHALL BE IN PVC SLEEVE.

2 GROUNDING RISER DIAGRAM
NOT TO SCALE

- LEGEND**
- GROUND KIT
 - CAD WELD
 - COMPRESSION CONNECTION
 - MECHANICAL CONNECTION
 - ⚡ BOND TO TOWER

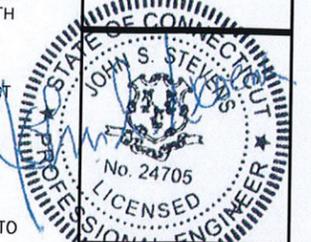
GROUNDING NOTES:

- ALL DOWN CONDUCTORS AND GROUND RING CONDUCTOR SHALL BE #2 AWG, SOLID, BARE, TINNED COPPER, UNO. ALL CONNECTIONS TO GROUND RING SHALL BE EXOTHERMICALLY WELDED. CONDUCTOR SHALL BE A MINIMUM DEPTH BELOW GRADE OF 30 INCHES OR TO THE LEDGE. MINIMUM BEND RADIUS SHALL BE 8 INCHES. CONDUCTOR SHALL BE AT LEAST 24 INCHES FROM ANY FOUNDATION, UNO.
- WHERE MECHANICAL CONDUCTOR CONNECTIONS ARE SPECIFIED, BOLTED, COMPRESSION-TYPE CLAMPS OR SPLIT-BOLT TYPE CONNECTORS SHALL BE USED.
- GRIND OFF GALVANIZING IN AFFECTED AREA. EXOTHERMICALLY WELD #2 CONDUCTOR AT 6 INCHES ABOVE GRADE OR FOUNDATION, WHICHEVER IS HIGHER. COLD-GALV AFTER. EXOTHERMICALLY WELD OTHER END TO GROUND.
- GROUND CONDUCTORS ON EXTERIOR WALL OF SHELTER SHALL BE ENCASED IN 3/4" PVC CONDUIT TO GRADE. MOUNT PVC WITH GALVANIZED "C" CLAMPS. SEAL TOP ENDS.
- FOLLOWING COMPLETION OF WORK, CONDUCT GROUND TEST. SUBMIT WRITTEN TEST TO CONSTRUCTION MANAGER AND PROJECT MANAGER.
- ALL GROUNDING WORK SHALL COMPLY WITH CARRIER(S) STANDARDS.
- GROUNDING REQUIREMENTS SHOWN ON THIS PLAN ARE FOR ITEMS THAT ARE LOCATED NEAR GRADE LEVEL AND THAT NEED TO BE TIED TO THE BELOW GRADE GROUND RING.
- UNLESS NOTED OTHERWISE, ALL GROUNDING SHALL BE IN ACCORDANCE WITH SPRINT'S SSEO DOCUMENTS 3.018.02.004 "BONDING, GROUNDING AND TRANSIENT PROTECTION FOR CELL SITES", AND 3.018.10.002 "SITE RESISTANCE TO EARTH TESTING". ALL GROUNDING SHALL ALSO COMPLY WITH ALL STATE AND LOCAL CODES, AND THE NATIONAL ELECTRICAL CODE (NEC).
- UNLESS NOTED OTHERWISE, ALL GROUNDING CONNECTIONS SHALL BE MADE BY AN EXOTHERMIC WELD.
- RESISTANCE TO EARTH TESTING IS REQUIRED PER SPRINT STANDARDS ON ALL NEW SITES.



- NOTES:**
- CONTRACTOR TO VERIFY EXISTING LUG SPACES ARE AVAILABLE ON GROUND BAR. ADD ADDITIONAL BUS BAR IF NO LUG SPACES ARE AVAILABLE.
 - ANTENNA GROUNDING CONNECTIONS SHOWN ARE NOT EXACT TO THIS SITE. FOR EXACT ANTENNA LAYOUT REFER TO SHEET C5.

4 TYPICAL ANTENNA GROUNDING PLAN
NOT TO SCALE



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BETHANY
719 AMITY ROAD
BETHANY, CT 06524

Client: Sprint
Implementation Team: Alcatel-Lucent
500 AVATION PARKWAY
SUITE 200
MORRISTOWN, NJ 07960

Drawing Scale: AS NOTED
Date: 2/19/13

GROUNDING PLAN AND DETAILS

Drawing Number: E3

A/E Consultant:
infini8 engineering
11 Herbert Drive
Latham, NY 12110
(518) 690-0790