

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

July 6, 2012

Stephanie Wenderoth
Nexlink Global Services
Suite A, Building 2
800 Marshall Phelps Road
Windsor, CT 06095

RE: **EM-AT&T-078-120618** – AT&T Mobility notice of intent to modify an existing telecommunications facility located at 497 Middle Turnpike, Mansfield, Connecticut.

Dear Ms. Wenderoth:

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

- Any deviation from the proposed modification as specified in this notice and supporting materials with 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;
- Not less than 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 June 14, 2012. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

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



with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Very truly yours,

A handwritten signature in cursive script that reads "Linda Roberts". To the right of the signature, there are some initials, possibly "UMB", written in a similar cursive style.

Linda Roberts
Executive Director

LR/CDM/cm

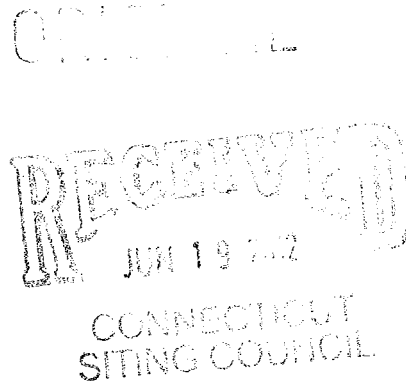
- c: The Honorable Elizabeth Patterson, Mayor, Town of Mansfield
Matthew W. Hart, Town Manager, Town of Mansfield
Linda M. Painter, Director of Planning and Development, Town of Mansfield

June 14, 2012

VIA UPS Overnight Delivery

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

RE: AT&T Mobility - Notice of Exempt Modification
497 Middle Turnpike, Storrs Mansfield



Dear Ms. Roberts:

This letter and attachments are submitted on behalf of AT&T Mobility ("AT&T"). AT&T is enhancing the capabilities of its wireless system in Connecticut by implementing LTE technology. In order to do so, AT&T will modify antenna and equipment configurations at a number of existing sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and attachments is being sent to the Town Manager of Windsor.

AT&T plans to modify the existing facility at 497 Middle Turnpike, owned by Bernard R. Brodin & AT&T Wireless Pcs LLC (coordinates 41-49-21.691 N, 72-17-10.676 W). Attached are drawings depicting the planned changes, and documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration. Also included is a power density calculation reflecting the modification to AT&T's operations at the site.

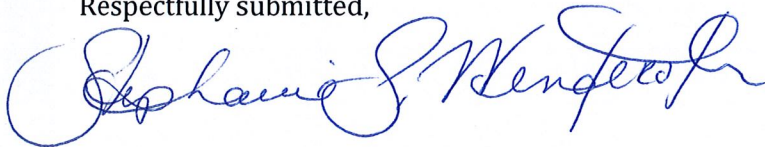
The changes to the facility do not constitute a modification as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C. S.A. Section 16-50j-1 2(b)(2).

1. The height of the overall structure will be unaffected. The existing antennas will remain and AT&T will add three (3) new antennas, six (6) RRU's and one (1) surge arrestor. Additionally, AT&T will install one (1) fiber cable and two (2) DC control cables within the existing monopole.
2. The proposed changes will not extend the site boundaries. AT&T will install additional equipment in the existing equipment shelter. Thus, there will be no effect on the site compound.
3. The proposed changes will not increase the noise level at the existing facility by six decibels or more. The incremental effect of the proposed change will be negligible.
4. The changes to the facility will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environment as calculated for a mixed frequency site. As indicated in the attached

power density calculations, AT&T's operations at the site will result in a power density of 2.16%; the combined site operations will result in a total power density of 15.9%.

Please feel free to call me with any questions or concerns regarding this matter.
Thank you for your consideration.

Respectfully submitted,

A handwritten signature in blue ink, reading "Stephanie Wenderoth". The signature is fluid and cursive, with the first name "Stephanie" written in a larger, more prominent script than the last name "Wenderoth".

AT&T Mobility
Stephanie Wenderoth, Consultant
wenderoths@nexlinkgs.com
401.477.2938

Cc: Matthew Hart; Town Manager, 4 South Eagleville Road, Mansfield, CT 06268

**CONNECTICUT SITING COUNCIL
NOTICE OF INTENT TO MODIFY AN EXISTING TOWER FACILITY
EXEMPT MODIFICATION FILING FORM**

Public Utility Environmental Standards Act, Connecticut General Statutes §§ 16-50g - 16-50aa
Regulations of Connecticut State Agencies §§ 16-50j-72(b)(2) and 16-50j-73

TO BE COMPLETED BY FILER

Date: 6/14/12

Filer Name and Contact Information

Name: Stephanie Wenderoth

Address: Nexlink Global Services; Suite A Building 2
800 Marshall Phelps Road, Windsor, CT 06095

Phone Number: 401.477.2938

Wireless Carrier: AT&T

Tower Owner: AT&T

Tower Site Address: 497 Middle Turnpike, Storrs Mansfield

Municipality and Name of Chief Elected Official Provided A Copy Of This Notice:
Matthew Hart; Town Manager

Description of Exempt Modification (including antenna and equipment changes):
Add 3 LTE Antennas, new conduit, RRUs and surge arrestor.

Attachments

- ☒ Plans
- ☒ Power density calculations if applicable
- ☒ Tower structural report if applicable
- ☒ \$625.00 Filing Fee

If required:

Municipality w/i 2,500' & Name of Chief Elected Official Provided A Copy Of This Notice:

Underlying Property Owner Provided A Copy Of This Notice:

FOR STAFF USE ONLY

- _____ Modification will not result in an increase in tower height
- _____ Modification is within existing site boundaries
- _____ Modification will not increase noise levels at the site boundary by 6 dbA or more, or to levels that exceed State & local criteria
- _____ Modification will meet FCC and DEEP MPE limits

- _____ Modification will not result in significant adverse change in physical or environmental characteristics of the site
- _____ Modification will not impair the structural integrity of the facility as determined by PE
- _____ If yes to all of the above, approval of acknowledgement letter



C Squared Systems, LLC
65 Dartmouth Drive, Unit A3
Auburn, NH 03032
(603) 644-2800
support@csquaredsystems.com

Calculated Radio Frequency Emissions



CT5822 – Mansfield Four Corners

497 Middle Turnpike, Storrs Mansfield, CT 06268

June 13, 2012

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1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed modifications to the existing AT&T antenna arrays mounted on the monopole tower located at 497 Middle Turnpike in Storrs Mansfield, CT. The coordinates of the tower are 41-49-32.77 N, 72-16-54.45 W.

AT&T is proposing the following modifications:

- 1) Install three 700 MHz LTE antennas (one per sector).

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm^2). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment B of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure, and they must be able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals. Attachment B contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population/uncontrolled exposure and for occupational/controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

3. RF Exposure Prediction Methods

The emission field calculation results displayed in the following figures were generated using the following formula as outlined in FCC bulletin OET 65:

$$\text{Power Density} = \left(\frac{1.6^2 \times EIRP}{4\pi \times R^2} \right) \times \text{Off Beam Loss}$$

Where:

EIRP = Effective Isotropic Radiated Power

R = Radial Distance = $\sqrt{H^2 + V^2}$

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Ground reflection factor of 1.6

Off Beam Loss is determined by the selected antenna pattern

These calculations assume that the antennas are operating at 100 percent capacity and power, and that all channels are transmitting simultaneously. Obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. The calculations assume even terrain in the area of study and do not take into account actual terrain elevations which could attenuate the signal. As a result, the predicted signal levels reported below are much higher than the actual signal levels will be from the finished modifications.

4. Calculation Results

Table 1 below outlines the power density information for the site. Because the proposed AT&T antennas are directional in nature, the majority of the RF power is focused out towards the horizon. As a result, there will be less RF power directed below the antennas relative to the horizon, and consequently lower power density levels around the base of the tower.

Please refer to Attachment C for the vertical pattern of the proposed AT&T antennas. The calculated results for AT&T in Table 1 include a nominal 10 dB off-beam pattern loss to account for the lower relative gain below the antennas.

| Carrier | Antenna Height (Feet) | Operating Frequency (MHz) | Number of Trans. | ERP Per Transmitter (Watts) | Power Density (mw/cm ²) | Limit | %MPE |
|-------------|-----------------------|---------------------------|------------------|-----------------------------|-------------------------------------|--------------|---------------|
| AT&T UMTS | 120 | 880 | 1 | 500 | 0.0125 | 0.5867 | 2.13% |
| AT&T GSM | 120 | 1900 | 2 | 427 | 0.0213 | 1.0000 | 2.13% |
| AT&T GSM | 120 | 880 | 4 | 296 | 0.0296 | 0.5867 | 5.04% |
| Verizon | 109 | 875 | 9 | 200 | 0.0545 | 0.5833 | 9.34% |
| Verizon PCS | 109 | 1970 | 3 | 485 | 0.0440 | 1.0000 | 4.40% |
| AT&T UMTS | 123 | 880 | 2 | 565 | 0.0027 | 0.5867 | 0.46% |
| AT&T UMTS | 123 | 1900 | 2 | 875 | 0.0042 | 1.0000 | 0.42% |
| AT&T LTE | 123 | 734 | 1 | 1375 | 0.0033 | 0.4893 | 0.67% |
| AT&T GSM | 123 | 880 | 1 | 283 | 0.0007 | 0.5867 | 0.11% |
| AT&T GSM | 123 | 1900 | 4 | 525 | 0.0050 | 1.0000 | 0.50% |
| | | | | | | Total | 15.90% |

Table 1: Carrier Information^{1 2 3}

¹ The existing CSC filing for AT&T should be removed and replaced with the updated AT&T technologies and values provided in Table 1. The power density information for carriers other than AT&T was taken directly from the CSC database dated 3/29/2012. Please note that %MPE values listed are rounded to two decimal points. The total %MPE listed is a summation of each unrounded contribution. Therefore, summing each rounded value may not reflect the total value listed in the table.

² In the case where antenna models are not uniform across all 3 sectors for the same frequency band, the antenna model with the highest gain was used for the calculations to present a worse-case scenario.

³ Antenna height listed for AT&T is in reference to the GPD Group Structural Analysis Report dated 4/20/2012.

5. Conclusion

The above analysis verifies that emissions from the existing site will be below the maximum power density levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Even when using conservative methods, the cumulative power density from the proposed transmit antennas at the existing facility is well below the limits for the general public. The highest expected percent of Maximum Permissible Exposure at ground level is **15.90% of the FCC limit**.

As noted previously, obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. As a result, the predicted signal levels are more conservative (higher) than the actual signal levels will be from the finished modifications.

6. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in ANSI/IEEE Std. C95.3, ANSI/IEEE Std. C95.1 and FCC OET Bulletin 65 Edition 97-01.



Daniel L. Goulet
C Squared Systems, LLC

June 13, 2012

Date

Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

ANSI C95.1-1982, American National Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300 kHz to 100 GHz. IEEE-SA Standards Board

IEEE Std C95.3-1991 (Reaff 1997), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave. IEEE-SA Standards Board

Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure⁴

| Frequency Range (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (E) (A/m) | Power Density (S) (mW/cm ²) | Averaging Time E ² , H ² or S (minutes) |
|-----------------------|-----------------------------------|-----------------------------------|---|---|
| 0.3-3.0 | 614 | 1.63 | (100)* | 6 |
| 3.0-30 | 1842/f | 4.89/f | (900/f ²)* | 6 |
| 30-300 | 61.4 | 0.163 | 1.0 | 6 |
| 300-1500 | - | - | f/300 | 6 |
| 1500-100,000 | - | - | 5 | 6 |

(B) Limits for General Population/Uncontrolled Exposure⁵

| Frequency Range (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (E) (A/m) | Power Density (S) (mW/cm ²) | Averaging Time E ² , H ² or S (minutes) |
|-----------------------|-----------------------------------|-----------------------------------|---|---|
| 0.3-1.34 | 614 | 1.63 | (100)* | 30 |
| 1.34-30 | 824/f | 2.19/f | (180/f ²)* | 30 |
| 30-300 | 27.5 | 0.073 | 0.2 | 30 |
| 300-1500 | - | - | f/1500 | 30 |
| 1500-100,000 | - | - | 1.0 | 30 |

f = frequency in MHz * Plane-wave equivalent power density

Table 2: FCC Limits for Maximum Permissible Exposure (MPE)

⁴ Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

⁵ General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

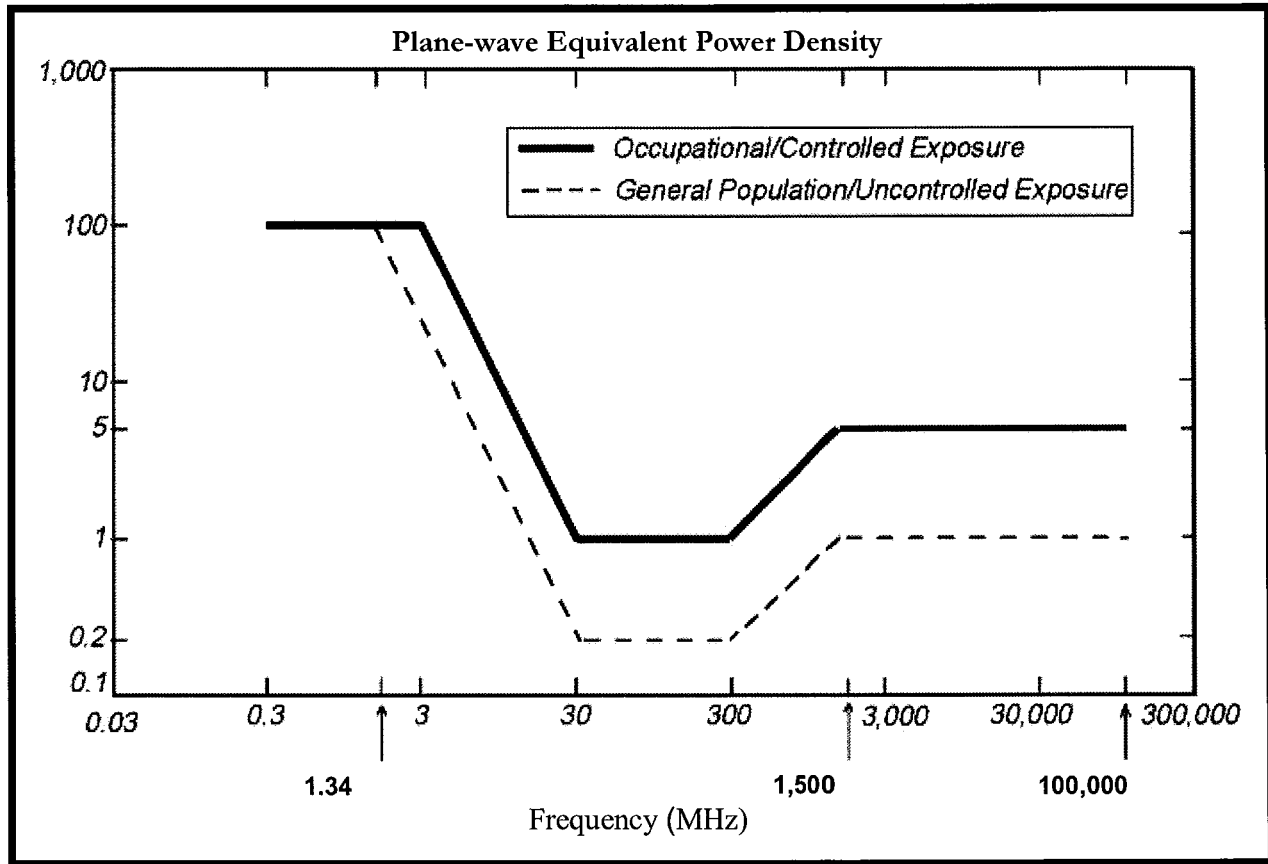
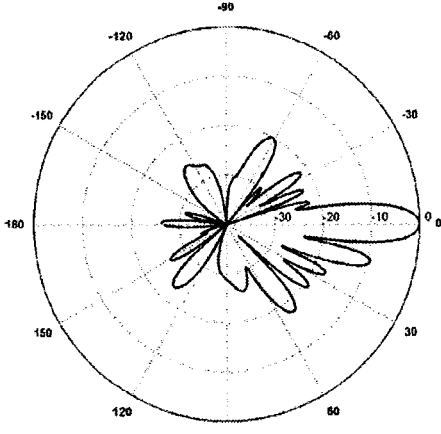
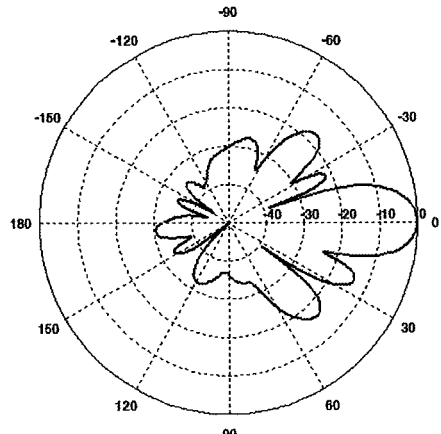
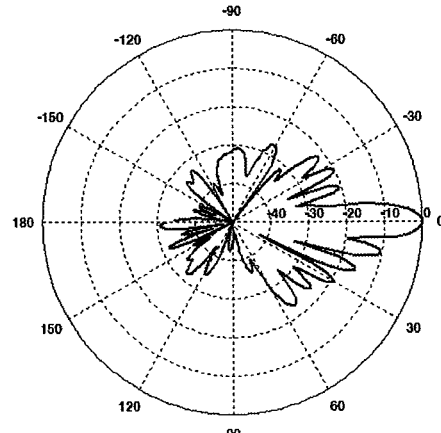


Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

Attachment C: AT&T Antenna Data Sheets and Electrical Patterns

| | |
|---|--|
| <p>700 MHz</p> <p>Manufacturer: Commscope Model #: SBNH-1D6565C Frequency Band: 698-806 MHz Gain: 13.6 dBd Vertical Beamwidth: 8.6° Horizontal Beamwidth: 71° Polarization: ±45° Size L x W x D: 96.4" x 11.6" x 7.1"</p> |  |
| <p>850 MHz</p> <p>Manufacturer: Powerwave Model #: 7770.00 Frequency Band: 824-896 MHz Gain: 11.5 dBd Vertical Beamwidth: 15° Horizontal Beamwidth: 82° Polarization: Dual Linear ±45° Size L x W x D: 55.0" x 11.0" x 5.0"</p> |  |
| <p>1900 MHz</p> <p>Manufacturer: Powerwave Model #: 7770.00 Frequency Band: 1850-1990 MHz Gain: 13.4 dBd Vertical Beamwidth: 7° Horizontal Beamwidth: 86° Polarization: Dual Linear ±45° Size L x W x D: 55.0" x 11.0" x 5.0"</p> |  |



Nexlink Global Services
800 Marshall Phelps Rd, #2A
Windsor, CT 06095
(860) 640-4833



Jason Cheronis
520 S. Main Street, Suite 2531
Akron, OH 44311
(330) 572-2137
jcheronis@gpdgroup.com

GPD# 2012801.04

April 20, 2012

STRUCTURAL ANALYSIS REPORT

AT&T DESIGNATION: **Site USID:** 27067
 Site FA: 10071108
 Site Name: MANSFIELD FOUR CORNERS
 AT&T Project: MOD LTE W3 012312

ANALYSIS CRITERIA: **Codes:** TIA/EIA-222-F, 2003 IBC, 2005 CT State Building Code, & ASCE 7-05
 85-mph fastest mile with 0" ice
 28-mph fastest mile with 1" ice

SITE DATA: 497 Middle Turnpike, Storrs Mansfield, CT, 06268, Tolland County
 Latitude 41° 49' 21.691" N, Longitude 72° 17' 10.676" W
 Market: New England
 120' PennSummit Monopole

Mr. Mark Roberts,

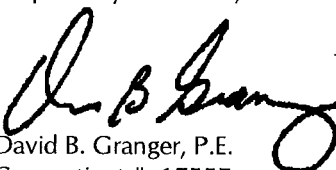
GPD is pleased to submit this Structural Analysis Report to determine the structural integrity of the aforementioned tower. The purpose of the analysis is to determine the suitability of the tower with the existing and proposed loading configuration detailed in the analysis report.

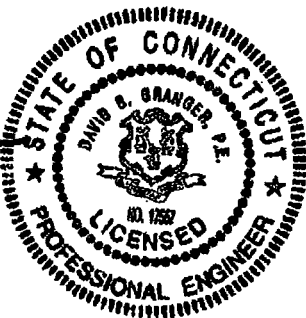
Analysis Results

| | | |
|---|-------|------|
| Tower Stress Level with Proposed Equipment: | 69.5% | Pass |
| Foundation Ratio with Proposed Equipment: | 49.3% | Pass |

We at GPD appreciate the opportunity of providing our continuing professional services to you and NexLink. If you have any questions or need further assistance on this or any other projects please do not hesitate to call.

Respectfully submitted,


David B. Granger, P.E.
Connecticut #: 17557



SUMMARY & RESULTS

The purpose of this analysis was to verify whether the existing structure is capable of carrying the proposed loading configuration as specified by AT&T to NexLink. This report was commissioned by Mr. Mark Roberts of NexLink.

All proposed coax shall be installed inside of a 3" flexible conduit internal to the monopole.

TOWER SUMMARY AND RESULTS

| Member | Capacity | Results |
|-------------|----------|---------|
| Monopole | 69.5% | Pass |
| Anchor Rods | 36.5% | Pass |
| Base Plate | 34.5% | Pass |
| Foundation | 49.3% | 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 |
|------------------------------|--|---------|
| Equipment Modification Form | AT&T Internal Loading Document, uploaded 3/29/2012 | Siterra |
| RF Data Sheet | Not Provided | N/A |
| Construction Drawings | Construction Document Rev. 0, dated 4/11/2012 | NexLink |
| Tower Design | Not Provided | Siterra |
| Foundation Design | Not Provided | Siterra |
| Geotechnical Report | Not Provided | Siterra |
| Previous Structural Analysis | Paul J. Ford, Project #: 29207-104, dated 9/5/2007 (contains foundation, geotechnical and tower information) | Siterra |
| Previous Structural Analysis | GPD Job #: 2008013.31, dated 12/9/2008 | 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 member 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. 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.
10. All existing loading was obtained from GPD (Job #: 2008013.31, dated 12/9/2008), site photos, the provided Equipment Modification Form and the Construction Drawings and is assumed to be accurate.
11. The proposed loading listed within the Equipment Modification Form was found to vary from the proposed loading listed in the Construction Drawings. The proposed loading has been modeled based on the loading listed within the Construction Drawings.
12. All proposed coax shall be installed inside of a 3" flexible conduit internal to the monopole.

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 | MANSFIELD FOUR CORNERS |
| Site Number | 27067 |
| FA Number | 10071108 |
| Date of Analysis | 4/20/2012 |
| Company Performing Analysis | GPD |

Tower Info

| Description | Date |
|---------------------------------|--------------------------------|
| Tower Type (G, SST, MP) | MP |
| Tower Height (top of steel AGL) | 120' |
| Tower Manufacturer | PennSummit |
| Tower Model | n/a |
| Tower Design | Paul J. Ford Job #: 29203-0309 |
| Foundation Design | Paul J. Ford Job #: 29203-0309 |
| Geotech Report | VM Engineering |
| Tower Mapping | n/a |
| Previous Structural Analysis | GPD Job #: 2008013.31 |
| Foundation Mapping | n/a |

Steel Yield Strength (ksi)

| | |
|-------------|----|
| Pole | 65 |
| Base Plate | 55 |
| Anchor Rods | 75 |

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

Design Parameters

| | |
|---------------------------------------|---|
| Design Code Used | TIA/EIA-222-F, 2003 IBC, 2005 CT Building Code, & ASCE 7-05 |
| Location of Tower (County, State) | Tolland, CT |
| Basic Wind Speed (mph) | 85 |
| Ice Thickness (in) | 1 |
| Structure Classification (I, II, III) | |
| Exposure Category (B, C, D) | |
| Topographic Category (1 to 5) | |

Analysis Results (% Maximum Usage)

| | |
|----------------------|---|
| Tower (%) | Existing/Reserved + Future + Proposed Condition |
| Base Plate (%) | 69.5% |
| Foundation (%) | 36.5% |
| Foundation Adequate? | 49.3% |
| | Yes |

Existing / Reserved Loading

| Antenna | | | Mount | | | Transmission Line | | |
|------------------|-------------------|-----------------|----------|----------|--------------|-------------------|---------|------------------------------|
| Antenna Owner | Mount Height (ft) | Antenna CL (ft) | Quantity | Type | Manufacturer | Quantity | Model | Attachment Internal/External |
| AT&T Mobility | 119 | 123 | 6 | Panel | Allgon | 1 | Unknown | Internal |
| AT&T Mobility | 119 | 123 | 6 | TMA | Powerwave | 1 | Unknown | Internal |
| AT&T Mobility | 119 | 123 | 6 | Diplexer | Powerwave | 1 | Unknown | Internal |
| Verizon Wireless | 109 | 109 | 6 | Panel | Antel | 1 | Unknown | Internal |
| Verizon Wireless | 109 | 109 | 6 | Panel | Antel | 1 | Unknown | Internal |
| Verizon Wireless | 109 | 109 | 6 | TMA | Andrew | 1 | Unknown | Internal |

Note: The existing loading platform at 120' shall be rotated so that the azimuth of face 'A' is 0 degrees. The existing antennas at 120' shall be given new azimuths of 0, 120, and 240 degrees.

Proposed Loading

| Antenna | | | Mount | | | Transmission Line | | |
|---------------|-------------------|-----------------|----------|---------|--------------|-------------------|---------|------------------------------|
| Antenna Owner | Mount Height (ft) | Antenna CL (ft) | Quantity | Type | Manufacturer | Quantity | Model | Attachment Internal/External |
| AT&T Mobility | 119 | 123 | 2 | Panel | KMW | 1 | Fiber | In conduit |
| AT&T Mobility | 119 | 123 | 1 | Panel | Andrew | 2 | DC Line | In conduit |
| AT&T Mobility | 119 | 123 | 6 | RRH | Ericsson | 1 | Conduit | Internal |
| AT&T Mobility | 119 | 123 | 1 | DC Unit | Raycap | 1 | Conduit | Internal |

Note: The proposed loading is in addition to the remaining loading at the same elevation.

Future Loading

| Antenna | | | Mount | | | Transmission Line | | |
|---------------|-------------------|-----------------|----------|------|--------------|-------------------|-------|------------------------------|
| Antenna Owner | Mount Height (ft) | Antenna CL (ft) | Quantity | Type | Manufacturer | Quantity | Model | Attachment Internal/External |
| | | | | | | | | |
| | | | | | | | | |

APPENDIX B

tnxTower Output File

| | | |
|--|--|----------------------------------|
| tnxTower GPD Group 520 S. Main St. Suite 2531 Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2101 | Job 27067 MANSFIELD FOUR CORNERS | Page 1 of 5 |
| | Project 2012801.04 | Date 10:14:43 04/20/12 |
| | Client NexLink | Designed by T. Sheldon |

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 Tolland County, Connecticut.

Basic wind speed of 85 mph.

Nominal ice thickness of 1.0000 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

A wind speed of 28 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.

Options

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

Feed Line/Linear Appurtenances - Entered As Area

| Description | Face or Leg | Allow Shield | Component Type | Placement ft | Total Number | | C _A A _A ft ² /ft | Weight plf |
|-----------------|-------------------|-----------------|-----------------------|-----------------|-----------------|----------|--|---------------|
| Climbing Pegs | C | No | CaAa (Out Of Face) | 120.00 - 8.00 | 1 | No Ice | 0.01 | 0.31 |
| | | | | | | 1/2" Ice | 0.12 | 0.71 |
| | | | | | | 1" Ice | 0.22 | 1.71 |
| | | | | | | 2" Ice | 0.41 | 5.56 |
| | | | | | | 4" Ice | 0.82 | 20.59 |
| Safety Line 3/8 | C | No | CaAa (Out Of Face) | 120.00 - 8.00 | 1 | No Ice | 0.04 | 0.22 |
| | | | | | | 1/2" Ice | 0.14 | 0.75 |
| | | | | | | 1" Ice | 0.24 | 1.28 |
| | | | | | | 2" Ice | 0.44 | 2.34 |
| | | | | | | 4" Ice | 0.84 | 4.46 |

| | | | | |
|--|----------------|------------------------------|--------------------|-------------------|
| tnxTower GPD Group 520 S. Main St. Suite 2531 Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2101 | Job | 27067 MANSFIELD FOUR CORNERS | Page | 2 of 5 |
| | Project | 2012801.04 | Date | 10:14:43 04/20/12 |
| | Client | NexLink | Designed by | T. Sheldon |

| Description | Face or Leg | Allow Shield | Component Type | Placement ft | Total Number | | C _A A _A ft ² /ft | Weight plf |
|--------------------------|-------------------|-----------------|-------------------|-----------------|-----------------|----------|--|---------------|
| LDF6-50A (1-1/4 FOAM) | C | No | Inside Pole | 120.00 - 8.00 | 12 | No Ice | 0.00 | 0.66 |
| | | | | | | 1/2" Ice | 0.00 | 0.66 |
| | | | | | | 1" Ice | 0.00 | 0.66 |
| | | | | | | 2" Ice | 0.00 | 0.66 |
| | | | | | | 4" Ice | 0.00 | 0.66 |
| 3/8" Fiber Cable | C | No | Inside Pole | 120.00 - 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 |
| 7/8" DC Power Cable | C | No | Inside Pole | 120.00 - 8.00 | 2 | No Ice | 0.00 | 0.60 |
| | | | | | | 1/2" Ice | 0.00 | 0.60 |
| | | | | | | 1" Ice | 0.00 | 0.60 |
| | | | | | | 2" Ice | 0.00 | 0.60 |
| | | | | | | 4" Ice | 0.00 | 0.60 |
| 3" Flex Conduit | A | No | Inside Pole | 120.00 - 8.00 | 1 | No Ice | 0.00 | 0.48 |
| | | | | | | 1/2" Ice | 0.00 | 0.48 |
| | | | | | | 1" Ice | 0.00 | 0.48 |
| | | | | | | 2" Ice | 0.00 | 0.48 |
| | | | | | | 4" Ice | 0.00 | 0.48 |
| LDF7-50A (1-5/8 FOAM) | A | No | Inside Pole | 109.00 - 8.00 | 12 | 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 |

Discrete Tower Loads

| Description | Face or Leg | Offset Type | Offsets: Horz Lateral Vert ft ft ft | Azimuth Adjustment ° | Placement ft | | C _A A _A Front ft ² | C _A A _A Side ft ² | Weight lb |
|--------------------------|-------------------|----------------|---|----------------------------|-----------------|----------|---|--|--------------|
| MTS 12.5' LP Platform | C | None | | 0.0000 | 119.00 | No Ice | 14.66 | 14.66 | 1250.00 |
| | | | | | | 1/2" Ice | 18.87 | 18.87 | 1481.33 |
| | | | | | | 1" Ice | 23.08 | 23.08 | 1712.66 |
| | | | | | | 2" Ice | 31.50 | 31.50 | 2175.32 |
| | | | | | | 4" Ice | 48.34 | 48.34 | 3100.64 |
| (2) 7770.00 w/Mount Pipe | A | From Leg | 4.00 0.00 4.00 | 0.0000 | 119.00 | No Ice | 5.88 | 4.10 | 61.54 |
| | | | | | | 1/2" Ice | 6.31 | 4.73 | 107.08 |
| | | | | | | 1" Ice | 6.75 | 5.37 | 160.39 |
| | | | | | | 2" Ice | 7.66 | 6.70 | 289.46 |
| | | | | | | 4" Ice | 9.58 | 9.87 | 654.29 |
| (2) 7770.00 w/Mount Pipe | B | From Leg | 4.00 0.00 4.00 | 0.0000 | 119.00 | No Ice | 5.88 | 4.10 | 61.54 |
| | | | | | | 1/2" Ice | 6.31 | 4.73 | 107.08 |
| | | | | | | 1" Ice | 6.75 | 5.37 | 160.39 |
| | | | | | | 2" Ice | 7.66 | 6.70 | 289.46 |
| | | | | | | 4" Ice | 9.58 | 9.87 | 654.29 |
| (2) 7770.00 w/Mount Pipe | C | From Leg | 4.00 0.00 4.00 | 0.0000 | 119.00 | No Ice | 5.88 | 4.10 | 61.54 |
| | | | | | | 1/2" Ice | 6.31 | 4.73 | 107.08 |
| | | | | | | 1" Ice | 6.75 | 5.37 | 160.39 |
| | | | | | | 2" Ice | 7.66 | 6.70 | 289.46 |
| | | | | | | 4" Ice | 9.58 | 9.87 | 654.29 |
| (2) LGP21401 | A | From Leg | 4.00 0.00 4.00 | 0.0000 | 119.00 | No Ice | 1.29 | 0.23 | 14.10 |
| | | | | | | 1/2" Ice | 1.45 | 0.31 | 21.26 |
| | | | | | | 1" Ice | 1.61 | 0.40 | 30.32 |

| | | | | |
|--|----------------|------------------------------|--------------------|-------------------|
| tnxTower GPD Group 520 S. Main St. Suite 2531 Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2101 | Job | 27067 MANSFIELD FOUR CORNERS | Page | 3 of 5 |
| | Project | 2012801.04 | Date | 10:14:43 04/20/12 |
| | Client | NexLink | Designed by | T. Sheldon |

| Description | Face or Leg | Offset Type | Offsets: Horz Lateral Vert ft ft ft | Azimuth Adjustment ° | Placement ft | | C _A A _A Front ft ² | C _A A _A Side ft ² | Weight lb |
|---|-------------------|----------------|---|----------------------------|-----------------|----------|---|--|--------------|
| (2) LGP21401 | B | From Leg | 4.00 0.00 4.00 | 0.0000 | 119.00 | 2" Ice | 1.97 | 0.61 | 54.89 |
| | | | | | | 4" Ice | 2.79 | 1.12 | 135.29 |
| | | | | | | No Ice | 1.29 | 0.23 | 14.10 |
| | | | | | | 1/2" Ice | 1.45 | 0.31 | 21.26 |
| | | | | | | 1" Ice | 1.61 | 0.40 | 30.32 |
| (2) LGP21401 | C | From Leg | 4.00 0.00 4.00 | 0.0000 | 119.00 | 2" Ice | 1.97 | 0.61 | 54.89 |
| | | | | | | 4" Ice | 2.79 | 1.12 | 135.29 |
| | | | | | | No Ice | 1.29 | 0.23 | 14.10 |
| | | | | | | 1/2" Ice | 1.45 | 0.31 | 21.26 |
| | | | | | | 1" Ice | 1.61 | 0.40 | 30.32 |
| (2) LGP21903 Diplexer | A | From Leg | 4.00 0.00 4.00 | 0.0000 | 119.00 | 2" Ice | 1.97 | 0.61 | 54.89 |
| | | | | | | 4" Ice | 2.79 | 1.12 | 135.29 |
| | | | | | | No Ice | 0.00 | 0.18 | 10.00 |
| | | | | | | 1/2" Ice | 0.00 | 0.25 | 13.44 |
| | | | | | | 1" Ice | 0.00 | 0.32 | 16.93 |
| (2) LGP21903 Diplexer | B | From Leg | 4.00 0.00 4.00 | 0.0000 | 119.00 | 2" Ice | 0.00 | 0.49 | 27.95 |
| | | | | | | 4" Ice | 0.00 | 0.94 | 71.54 |
| | | | | | | No Ice | 0.00 | 0.18 | 11.02 |
| | | | | | | 1/2" Ice | 0.00 | 0.25 | 13.44 |
| | | | | | | 1" Ice | 0.00 | 0.32 | 16.93 |
| (2) LGP21903 Diplexer | C | From Leg | 4.00 0.00 4.00 | 0.0000 | 119.00 | 2" Ice | 0.00 | 0.49 | 27.95 |
| | | | | | | 4" Ice | 0.00 | 0.94 | 71.54 |
| | | | | | | No Ice | 0.00 | 0.18 | 10.00 |
| | | | | | | 1/2" Ice | 0.00 | 0.25 | 13.44 |
| | | | | | | 1" Ice | 0.00 | 0.32 | 16.93 |
| 2.5" x 6' mount pipe | A | From Leg | 4.00 0.00 4.00 | 0.0000 | 119.00 | 2" Ice | 0.00 | 0.49 | 27.95 |
| | | | | | | 4" Ice | 0.00 | 0.94 | 71.54 |
| | | | | | | No Ice | 1.50 | 1.50 | 20.00 |
| | | | | | | 1/2" Ice | 1.97 | 1.97 | 31.31 |
| | | | | | | 1" Ice | 2.34 | 2.34 | 46.69 |
| 2.5" x 6' mount pipe | B | From Leg | 4.00 0.00 4.00 | 0.0000 | 119.00 | 2" Ice | 3.10 | 3.10 | 90.27 |
| | | | | | | 4" Ice | 4.75 | 4.75 | 233.04 |
| | | | | | | No Ice | 1.50 | 1.50 | 20.00 |
| | | | | | | 1/2" Ice | 1.97 | 1.97 | 31.31 |
| | | | | | | 1" Ice | 2.34 | 2.34 | 46.69 |
| 2.5" x 6' mount pipe | C | From Leg | 4.00 0.00 4.00 | 0.0000 | 119.00 | 2" Ice | 3.10 | 3.10 | 90.27 |
| | | | | | | 4" Ice | 4.75 | 4.75 | 233.04 |
| | | | | | | No Ice | 1.50 | 1.50 | 20.00 |
| | | | | | | 1/2" Ice | 1.97 | 1.97 | 31.31 |
| | | | | | | 1" Ice | 2.34 | 2.34 | 46.69 |
| AM-X-CD-16-65-00T w/ 2"x78" Mount Pipe | A | From Leg | 4.00 0.00 4.00 | 0.0000 | 119.00 | 2" Ice | 3.10 | 3.10 | 90.27 |
| | | | | | | 4" Ice | 4.75 | 4.75 | 233.04 |
| | | | | | | No Ice | 7.09 | 5.68 | 56.73 |
| | | | | | | 1/2" Ice | 7.71 | 6.69 | 112.77 |
| | | | | | | 1" Ice | 8.28 | 7.51 | 179.35 |
| AM-X-CD-16-65-00T w/ 2"x78" Mount Pipe | B | From Leg | 4.00 0.00 4.00 | 0.0000 | 119.00 | 2" Ice | 9.45 | 9.18 | 335.57 |
| | | | | | | 4" Ice | 11.92 | 12.75 | 772.87 |
| | | | | | | No Ice | 7.09 | 5.68 | 56.73 |
| | | | | | | 1/2" Ice | 7.71 | 6.69 | 112.77 |
| | | | | | | 1" Ice | 8.28 | 7.51 | 179.35 |
| SBNH-1D6565C w/ Mount Pipe | C | From Leg | 4.00 0.00 4.00 | 0.0000 | 119.00 | 2" Ice | 9.45 | 9.18 | 335.57 |
| | | | | | | 4" Ice | 11.92 | 12.75 | 772.87 |
| | | | | | | No Ice | 11.45 | 9.12 | 82.70 |
| | | | | | | 1/2" Ice | 12.06 | 10.21 | 162.03 |
| | | | | | | 1" Ice | 12.69 | 11.18 | 254.15 |
| | | | | | | 2" Ice | 14.03 | 13.17 | 469.01 |
| | | | | | | 4" Ice | 17.05 | 17.35 | 1051.99 |

| | | | | |
|--|----------------|------------------------------|--------------------|-------------------|
| tnxTower GPD Group 520 S. Main St. Suite 2531 Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2101 | Job | 27067 MANSFIELD FOUR CORNERS | Page | 4 of 5 |
| | Project | 2012801.04 | Date | 10:14:43 04/20/12 |
| | Client | NexLink | Designed by | T. Sheldon |

| Description | Face or Leg | Offset Type | Offsets: Horz Lateral Vert ft ft ft | Azimuth Adjustment ° | Placement ft | | C _A A _A Front ft ² | C _A A _A Side ft ² | Weight lb |
|---|-------------------|----------------|---|----------------------------|-----------------|--|---|--|---|
| (2) RRUS 11 | A | From Leg | 4.00 0.00 4.00 | 0.0000 | 119.00 | 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 | 55.00 74.32 96.56 150.56 302.12 |
| (2) RRUS 11 | B | From Leg | 4.00 0.00 4.00 | 0.0000 | 119.00 | 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 | 55.00 74.32 96.56 150.56 302.12 |
| (2) RRUS 11 | C | From Leg | 4.00 0.00 4.00 | 0.0000 | 119.00 | 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 | 55.00 74.32 96.56 150.56 302.12 |
| DC6-48-60-18-8F Surge Suppression Unit | C | From Leg | 1.00 0.00 4.00 | 0.0000 | 119.00 | 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 | 32.80 50.52 70.72 119.24 252.92 |
| 2.5" x 3.5' Mount Pipe | C | From Leg | 1.00 0.00 4.00 | 0.0000 | 119.00 | No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice | 0.74 0.96 1.18 1.66 2.92 | 0.74 0.96 1.18 1.66 2.92 | 20.00 26.73 36.00 62.79 153.63 |
| MTS 12.5' LP Platform | C | None | | 0.0000 | 109.00 | No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice | 14.66 18.87 23.08 31.50 48.34 | 14.66 18.87 23.08 31.50 48.34 | 1250.00 1481.33 1712.66 2175.32 3100.64 |
| (2) LPA-80080/6CF w/ Mount Pipe | A | From Leg | 3.76 1.37 0.00 | 20.0000 | 109.00 | No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice | 4.35 4.79 5.25 6.17 8.11 | 10.51 11.56 12.49 14.40 18.43 | 42.90 104.60 177.42 348.65 824.28 |
| (2) LPA-80080/6CF w/ Mount Pipe | B | From Leg | 3.76 1.37 0.00 | 20.0000 | 109.00 | No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice | 4.35 4.79 5.25 6.17 8.11 | 10.51 11.56 12.49 14.40 18.43 | 42.90 104.60 177.42 348.65 824.28 |
| (2) LPA-80080/6CF w/ Mount Pipe | C | From Leg | 3.76 1.37 0.00 | 20.0000 | 109.00 | No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice | 4.35 4.79 5.25 6.17 8.11 | 10.51 11.56 12.49 14.40 18.43 | 42.90 104.60 177.42 348.65 824.28 |
| (2) LPA-185080/12CF w/ Mount Pipe | A | From Leg | 3.76 1.37 0.00 | 20.0000 | 109.00 | No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice | 3.79 4.33 4.84 5.87 8.05 | 6.23 7.40 8.28 10.09 13.93 | 36.05 78.20 131.70 263.48 660.48 |
| (2) LPA-185080/12CF w/ Mount Pipe | B | From Leg | 3.76 1.37 0.00 | 20.0000 | 109.00 | No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice | 3.79 4.33 4.84 5.87 8.05 | 6.23 7.40 8.28 10.09 13.93 | 36.05 78.20 131.70 263.48 660.48 |
| (2) LPA-185080/12CF w/ Mount Pipe | C | From Leg | 3.76 1.37 | 20.0000 | 109.00 | No Ice 1/2" Ice | 3.79 4.33 | 6.23 7.40 | 36.05 78.20 |

| | | | | |
|--|----------------|------------------------------|--------------------|-------------------|
| tnxTower GPD Group 520 S. Main St. Suite 2531 Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2101 | Job | 27067 MANSFIELD FOUR CORNERS | Page | 5 of 5 |
| | Project | 2012801.04 | Date | 10:14:43 04/20/12 |
| | Client | NexLink | Designed by | T. Sheldon |

| 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 |
|-------------|-------------------|----------------|---|----------------------------|-----------------|---|--|--------------|
| | | | 0.00 | | | 1" Ice 4.84 | 8.28 | 131.70 |
| | | | | | | 2" Ice 5.87 | 10.09 | 263.48 |
| | | | | | | 4" Ice 8.05 | 13.93 | 660.48 |
| (2) TMA | A | From Leg | 3.76 | 20.0000 | 109.00 | No Ice 0.00 | 0.12 | 1.20 |
| | | | 1.37 | | | 1/2" Ice 0.00 | 0.17 | 3.05 |
| | | | 0.00 | | | 1" Ice 0.00 | 0.24 | 5.87 |
| | | | | | | 2" Ice 0.00 | 0.39 | 15.20 |
| | | | | | | 4" Ice 0.00 | 0.81 | 54.09 |
| (2) TMA | B | From Leg | 3.76 | 20.0000 | 109.00 | No Ice 0.00 | 0.12 | 1.20 |
| | | | 1.37 | | | 1/2" Ice 0.00 | 0.17 | 3.05 |
| | | | 0.00 | | | 1" Ice 0.00 | 0.24 | 5.87 |
| | | | | | | 2" Ice 0.00 | 0.39 | 15.20 |
| | | | | | | 4" Ice 0.00 | 0.81 | 54.09 |
| (2) TMA | C | From Leg | 3.76 | 20.0000 | 109.00 | No Ice 0.00 | 0.12 | 1.20 |
| | | | 1.37 | | | 1/2" Ice 0.00 | 0.17 | 3.05 |
| | | | 0.00 | | | 1" Ice 0.00 | 0.24 | 5.87 |
| | | | | | | 2" Ice 0.00 | 0.39 | 15.20 |
| | | | | | | 4" Ice 0.00 | 0.81 | 54.09 |

Critical Deflections and Radius of Curvature - Service Wind

| Elevation ft | Appurtenance | Gov. Load Comb. | Deflection in | Tilt ° | Twist ° | Radius of Curvature ft |
|-----------------|-----------------------|-----------------------|------------------|-----------|------------|------------------------------|
| 119.00 | MTS 12.5' LP Platform | 35 | 13.816 | 1.2212 | 0.0063 | 28785 |
| 109.00 | MTS 12.5' LP Platform | 35 | 11.464 | 1.0823 | 0.0048 | 13084 |

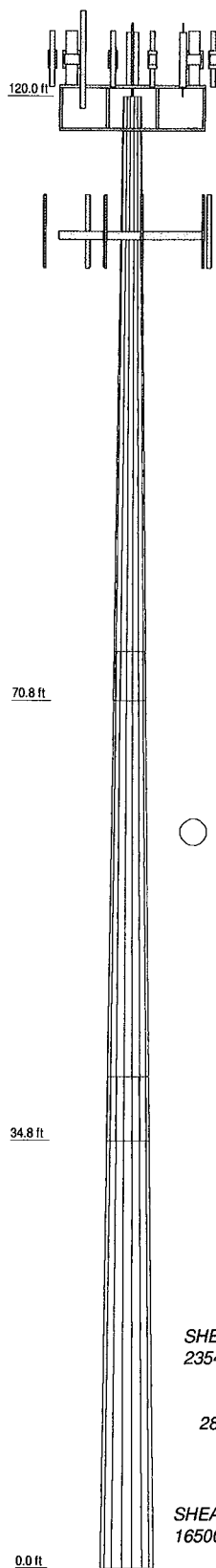
Section Capacity Table

| Section No. | Elevation ft | Component Type | Size | Critical Element | P lb | SF*P _{allow} lb | % Capacity | Pass Fail |
|----------------|-----------------|-------------------|------------------------|---------------------|-----------|-----------------------------|---------------|--------------|
| L1 | 120 - 70.75 | Pole | TP32.283x18x0.1875 | 1 | -6816.23 | 916122.87 | 69.5 | Pass |
| L2 | 70.75 - 34.75 | Pole | TP42.348x30.748x0.3125 | 2 | -12083.30 | 2089037.52 | 48.1 | Pass |
| L3 | 34.75 - 0 | Pole | TP51.8x40.2005x0.375 | 3 | -21042.20 | 3182057.49 | 43.0 | Pass |
| Summary | | | | | | | | |
| Pole (L1) | | | | | | | 69.5 | Pass |
| RATING = | | | | | | | 69.5 | Pass |

APPENDIX C

Tower Elevation Drawing

| | | | | |
|--------------------|---------|---------|---------|--|
| Section | 1 | 2 | 3 | |
| Length (ft) | 49.25 | 40.00 | 40.00 | |
| Number of Sides | 18 | 18 | 18 | |
| Thickness (in) | 0.1875 | 0.3125 | 0.3750 | |
| Socket Length (ft) | 4.00 | 5.25 | 40.2005 | |
| Top Dia (in) | 18.0000 | 30.7480 | 51.8000 | |
| Bot Dia (in) | 32.2830 | 42.3480 | 7391.6 | |
| Grade | | A607-65 | | |
| Weight (lb) | 2488.8 | 4892.0 | 14772.4 | |



DESIGNED APPURTENANCE LOADING

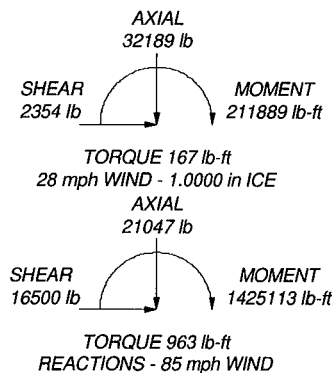
| TYPE | ELEVATION | TYPE | ELEVATION |
|--|-----------|--|-----------|
| MTS 12.5' LP Platform | 119 | SBNH-1D6565C w/ Mount Pipe | 119 |
| (2) 7770.00 w/Mount Pipe | 119 | (2) RRUS 11 | 119 |
| (2) 7770.00 w/Mount Pipe | 119 | (2) RRUS 11 | 119 |
| (2) 7770.00 w/Mount Pipe | 119 | (2) RRUS 11 | 119 |
| (2) LGP21401 | 119 | DC6-48-60-18-8F Surge Suppression Unit | 119 |
| (2) LGP21401 | 119 | | |
| (2) LGP21401 | 119 | 2.5" x 3.5' Mount Pipe | 119 |
| (2) LGP21903 Diplexer | 119 | MTS 12.5' LP Platform | 109 |
| (2) LGP21903 Diplexer | 119 | (2) LPA-80080/6CF w/ Mount Pipe | 109 |
| (2) LGP21903 Diplexer | 119 | (2) LPA-80080/6CF w/ Mount Pipe | 109 |
| 2.5" x 6' mount pipe | 119 | (2) LPA-80080/6CF w/ Mount Pipe | 109 |
| 2.5" x 6' mount pipe | 119 | (2) LPA-185080/12CF w/ Mount Pipe | 109 |
| 2.5" x 6' mount pipe | 119 | (2) LPA-185080/12CF w/ Mount Pipe | 109 |
| AM-X-CD-16-65-00T w/ 2"x78" Mount Pipe | 119 | (2) LPA-185080/12CF w/ Mount Pipe | 109 |
| AM-X-CD-16-65-00T w/ 2"x78" Mount Pipe | 119 | (2) TMA | 109 |
| | | (2) TMA | 109 |
| | | (2) TMA | 109 |

MATERIAL STRENGTH

| GRADE | Fy | Fu | GRADE | Fy | Fu |
|---------|--------|--------|-------|----|----|
| A607-65 | 65 ksi | 80 ksi | | | |

TOWER DESIGN NOTES

1. Tower is located in Tolland 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 28 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 69.5%



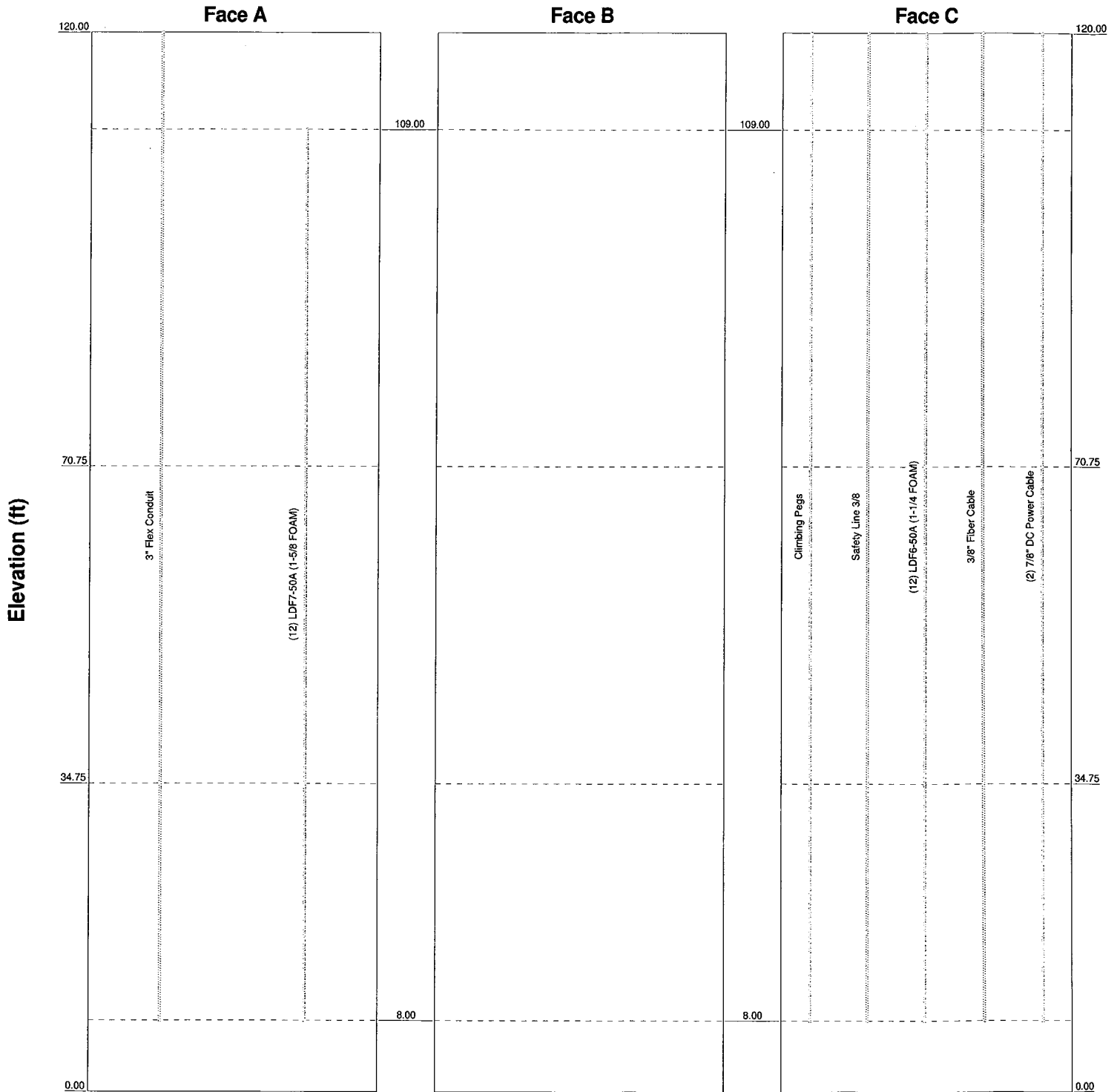
GPD Group
520 S. Main St. Suite 2531
Akron, OH 44311
Phone: (330) 572-2100
FAX: (330) 572-2101

Job: **27067 MANSFIELD FOUR CORNERS**
Project: **2012801.04**
Client: NexLink
Code: TIA/EIA-222-F
Path: O:\2012\2012801\04\TNX\27067 MANSFIELD FOUR CORNERS - TNX.dwg
Drawn by: T. Sheldon
Date: 04/20/12
App'd: [Signature]
Scale: NTS
Dwg No. E-1

Feedline Distribution Chart

0' - 120'

Round Flat App In Face App Out Face Truss Leg



| | | | |
|---|--|-----------------------------|--------------------|
|  GPD Group 520 S. Main St. Suite 2531 Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2101 | Job: 27067 MANSFIELD FOUR CORNERS | | |
| | Project: 2012801.04 | | |
| | Client: NexLink | Drawn by: T. Sheldon | App'd: |
| | Code: TIA/EIA-222-F | Date: 04/20/12 | Scale: NTS |
| | Path: Q:\2012\2012801\04\TNX\27067 MANSFIELD FOUR CORNERS - TNX.dwg | | Dwg No. E-7 |



Coax Internal To Pole:

- (12) 1-1/4" Coax to 120'
- (1) 3" Flexible Conduit 120'
- (1) 3/8" Fiber to 120' (in conduit)
- (2) 7/8" DC Line to 120' (in conduit)
- (12) 1-5/8" Coax to 109'

COAX PLACEMENT

NOT TO SCALE

SHEET
1 OF 1

27067 MANSFIELD FOUR CORNERS
NexLink

JOB NO.
2012801.04
DATE
4/20/2012

GPD GROUP

ENGINEERS • ARCHITECTS • PLANNERS

520 South Main Street • Suite 2531 • Akron Ohio 44311-1010 • Tel: 330-572-2100 • Fax: 330-572-2101

APPENDIX D

Base Plate & Anchor Rod Analysis



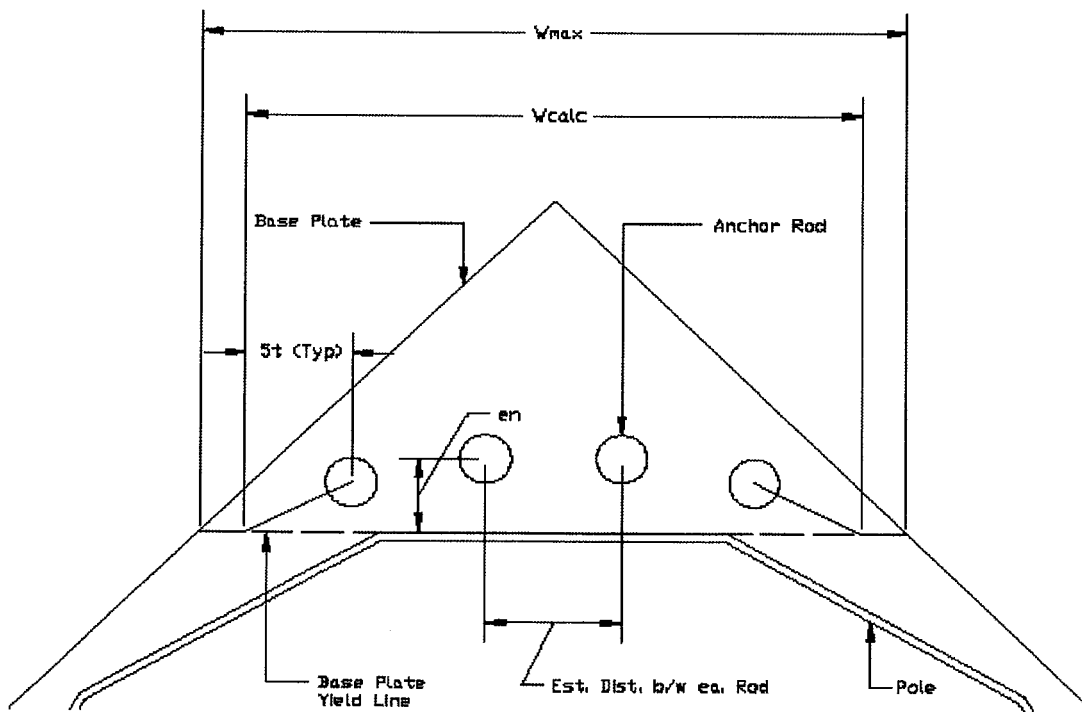
Anchor Rod and Base Plate Stresses **27067 MANSFIELD FOUR CORNERS** **2012801.04**

| | |
|----------------------|--------------|
| Overturning Moment = | 1425.11 k*ft |
| Axial Force = | 21.05 k |
| Shear Force = | 16.50 k |

| | |
|---------------------------|--------|
| Acceptable Stress Ratio = | 100.0% |
|---------------------------|--------|

| Anchor Rods | |
|------------------------------|----------------------|
| Pole Diameter = | 51.8 in |
| Number of Rods = | 16 |
| Type = | Upset Rod |
| Rod Yield Strength (Fy) = | 75 ksi |
| ASIF = | 1.333 |
| Rod Circle = | 59 in |
| Rod Diameter = | 2.25 in |
| Net Tensile Area = | 3.25 in ² |
| Max Tension on Rod = | 71.10 kips |
| Max Compression on Rod = | 73.73 kips |
| Allow. Rod Force = | 195.00 kips |
| Anchor Rod Capacity = | 36.5% OK |

| Base Plate | |
|------------------------------|-----------------------|
| Plate Strength (Fy) = | 55 ksi |
| Plate Thickness = | 3 in |
| Plate Width = | 57 in |
| Est. Dist. b/w ea. Rod = | 6 in |
| W _{calc} = | 47.752 in |
| W _{max} = | 28.810 in |
| w = | 28.81 in |
| S = | 43.22 in ³ |
| fb = | 18.97 ksi |
| Fb = | 55 ksi |
| Base Plate Capacity = | 34.5% OK |



APPENDIX E

Foundation Analysis



CAISSON ANALYSIS WORKSHEET

Client: NexLink
Site ID: 27067
Site Name: MANSFIELD FOUR CORNERS
Location: Tolland County, Connecticut
Loading Type: Wind

Job No.: 2012801.04
Sheet No.: 1 Of 1
Made By: TS Date: 4/20/2012
Chkd By: Date:
Code: F

FOUNDATION DATA

Diameter = 7 ft
Length = 22.5 ft
Rebar Size = #11
of bars = 20
Tie Size = #4
Clear Cover = 3 inches
Edge to Bar Center = 4.205 inches
 f'_c = 3 ksi

RISA Reactions (Service)

Moment = 1426 ft-k
Axial = 21.05 kips
Shear = 16.5 kips

PILE TYPE 2 ANALYSIS FOR REINFORCING CAPACITY

Mn = 67949.00 in-k
Min = 5662.42 ft-k

Load Factor = 1.3
 ϕ (flexure) = 0.9

ϕMn = 5096.18 ft-k

MOMENT FROM CAISSON PROGRAM USING ADJUSTED S.F. AND ACTUAL CAISSON LENGTH

Moment = 1519.3 ft-k (max. moment along caisson)

REINFORCING STEEL CAPACITY

Capacity = $\frac{LF * \text{Moment from Caisson}}{\phi Mn} = \frac{1975.09 \text{ ft-k}}{5096.18 \text{ ft-k}} = 38.8\% \text{ O.K.}$

SOIL CAPACITY FROM CAISSON PROGRAM USING ADDITIONAL SAFETY FACTORS

ADDITIONAL SAFETY FACTOR FROM CAISSON = 4.06

Capacity = $\frac{\text{Safety Factor of 2}}{\text{Additional Safety Factor}} = \frac{2.00}{4.06} = 49.3\% \text{ O.K.}$

* PIER FOUNDATIONS ANALYSIS AND DESIGN - (C) 1995, POWER LINE SYSTEMS, INC. *

*** ANALYSIS IDENTIFICATION : 27067 MANSFIELD FOUR CORNERS

NOTES : 2012801.04

*** PIER PROPERTIES CONCRETE STRENGTH (ksi) = 3.00 STEEL STRENGTH (ksi) = 60.00
 DIAMETER (ft) = 7.000 DISTANCE FROM TOP OF PIER TO GROUND LEVEL (ft) = 0.50

| *** SOIL PROPERTIES | LAYER | TYPE | THICKNESS (ft) | DEPTH AT TOP OF LAYER (ft) | DENSITY (pcf) | CU (psf) | KP | PHI (degrees) |
|---------------------|-------|------|----------------|----------------------------|---------------|----------|-------|---------------|
| | 1 | C | 4.00 | 0.00 | 100.0 | 0.0 | | |
| | 2 | S | 9.00 | 4.00 | 130.0 | | 3.255 | 32.00 |
| | 3 | S | 24.00 | 13.00 | 57.0 | | 3.255 | 32.00 |

*** DESIGN (FACTORED) LOADS AT TOP OF PIER MOMENT (ft-k) = 1425.1 VERTICAL (k) = 21.0 SHEAR (k) = 16.5
 ADDITIONAL SAFETY FACTOR AGAINST SOIL FAILURE = 4.06

*** CALCULATED PIER LENGTH (ft) = 22.500

*** CHECK OF SOILS PROPERTIES AND ULTIMATE RESISTING FORCES ALONG PIER

| TYPE | TOP OF LAYER BELOW TOP OF PIER (ft) | THICKNESS (ft) | DENSITY (pcf) | CU (psf) | KP | FORCE (k) | ARM (ft) |
|------|-------------------------------------|----------------|---------------|----------|-------|-----------|----------|
| C | 0.50 | 4.00 | 100.0 | 0.0 | | 0.00 | 2.50 |
| S | 4.50 | 9.00 | 130.0 | | 3.255 | 605.89 | 9.89 |
| S | 13.50 | 2.60 | 57.0 | | 3.255 | 292.34 | 14.82 |
| S | 16.10 | 6.40 | 57.0 | | 3.255 | -831.17 | 19.40 |

*** SHEAR AND MOMENTS ALONG PIER

| DISTANCE BELOW TOP OF PIER (ft) | WITH THE ADDITIONAL SAFETY FACTOR | | WITHOUT ADDITIONAL SAFETY FACTOR | |
|---------------------------------|-----------------------------------|---------------|----------------------------------|---------------|
| | SHEAR (k) | MOMENT (ft-k) | SHEAR (k) | MOMENT (ft-k) |
| 0.00 | 67.1 | 5801.9 | 16.5 | 1429.0 |
| 2.25 | 67.1 | 5952.8 | 16.5 | 1466.2 |
| 4.50 | 67.1 | 6103.7 | 16.5 | 1503.4 |
| 6.75 | -16.9 | 6168.5 | -4.2 | 1519.3 |
| 9.00 | -145.9 | 5993.7 | -35.9 | 1476.3 |
| 11.25 | -319.9 | 5478.1 | -78.8 | 1349.3 |
| 13.50 | -538.8 | 4520.5 | -132.7 | 1113.4 |
| 15.75 | -790.1 | 3029.1 | -194.6 | 746.1 |
| 18.00 | -601.2 | 1382.3 | -148.1 | 340.5 |
| 20.25 | -310.5 | 353.0 | -76.5 | 86.9 |
| 22.50 | 0.0 | 0.0 | 0.0 | 0.0 |

```

*** TOTAL REINFORCEMENT PCT = 0.32      REINFORCEMENT AREA (in^2) = 17.73
*** USABLE AXIAL CAP. (k) = 21.0      USABLE MOMENT CAP. (ft-k) = 2788.1

*** US Standard Re-Bars (Select one of the following):
89 BARS #4 (AREA = 0.20 in^2 DIA = 0.500 in) AT SPACING (in) = 2.61
58 BARS #5 (AREA = 0.31 in^2 DIA = 0.625 in) AT SPACING (in) = 4.01
41 BARS #6 (AREA = 0.44 in^2 DIA = 0.750 in) AT SPACING (in) = 5.67
30 BARS #7 (AREA = 0.60 in^2 DIA = 0.875 in) AT SPACING (in) = 7.75
23 BARS #8 (AREA = 0.79 in^2 DIA = 1.000 in) AT SPACING (in) = 10.11
18 BARS #9 (AREA = 1.00 in^2 DIA = 1.128 in) AT SPACING (in) = 12.92
14 BARS #10 (AREA = 1.27 in^2 DIA = 1.270 in) AT SPACING (in) = 16.61
12 BARS #11 (AREA = 1.56 in^2 DIA = 1.410 in) AT SPACING (in) = 19.37
8 BARS #14 (AREA = 2.25 in^2 DIA = 1.693 in) AT SPACING (in) = 29.06

*** PRESSURE UNDER CAISSON DUE TO DESIGN AXIAL LOAD (psf) = 546.9

```

Lpile.txt

=====

LPILE Plus for Windows, Version 5.0 (5.0.39)

Analysis of Individual Piles and Drilled Shafts
Subjected to Lateral Loading Using the p-y Method

(c) 1985-2007 by Ensoft, Inc.
All Rights Reserved

=====

This program is licensed to:

Path to file locations: C:\Documents and Settings\tsheldon\Desktop\
Name of input data file: 2012801.04.lpd
Name of output file: 2012801.04.lpo
Name of plot output file: 2012801.04.lpp
Name of runtime file: 2012801.04.lpr

Time and Date of Analysis

Date: April 19, 2012 Time: 9:15:21

Problem Title

New LPILE Plus 5.0 Data File

Program Options

Units Used in Computations - US Customary Units: Inches, Pounds

Basic Program Options:

Analysis Type 2:
- Computation of Ultimate Bending Moment of Cross Section (Section Design)

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

Number of sections = 1

Pile Section No. 1

The sectional shape is a circular drilled shaft (bored pile).

Lpile.txt

Outside Diameter = 84.0000 in

Material Properties:

Compressive Strength of Concrete = 3.000 kip/in**2
 Yield Stress of Reinforcement = 60. kip/in**2
 Modulus of Elasticity of Reinforcement = 29000. kip/in**2
 Number of Reinforcing Bars = 20
 Area of Single Bar = 1.56000 in**2
 Number of Rows of Reinforcing Bars = 11
 Area of Steel = 31.200 in**2
 Area of Shaft = 5541.769 in**2
 Percentage of Steel Reinforcement = .563 percent
 Cover Thickness (edge to bar center) = 4.200 in

Unfactored Axial Squash Load Capacity = 15923.95 kip


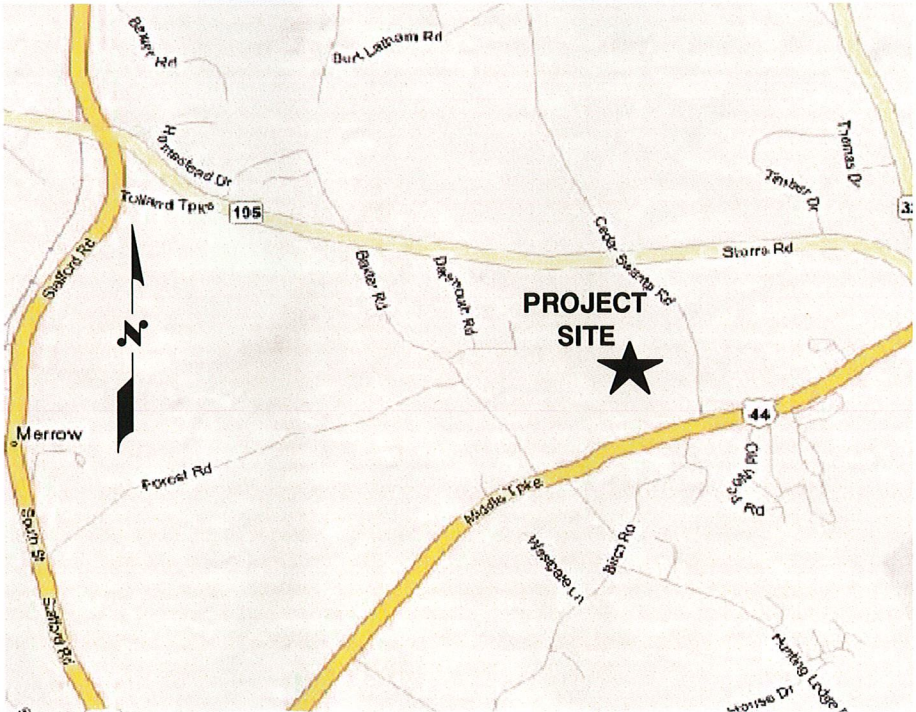





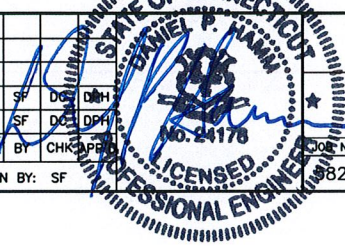
Distribution and Area of Steel Reinforcement

| Row Number | Area of Reinforcement in**2 | Distance to Centroidal Axis in |
|---------------|-----------------------------------|--------------------------------------|
| ----- | ----- | ----- |
| 1 | 1.560 | 37.800 |
| 2 | 3.120 | 35.950 |
| 3 | 3.120 | 30.581 |
| 4 | 3.120 | 22.218 |
| 5 | 3.120 | 11.681 |
| 6 | 3.120 | 0.000 |
| 7 | 3.120 | -11.681 |
| 8 | 3.120 | -22.218 |
| 9 | 3.120 | -30.581 |
| 10 | 3.120 | -35.950 |
| 11 | 1.560 | -37.800 |

Axial Thrust Force = 21047.00 lbs

Unfactored (Nominal) Moment Capacity at Concrete Strain of 0.003 = 67949.00273 in-kip

The analysis ended normally.

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--|---|--|-----|----------|-------------------------|----|----|-----|---|----------|-------------------|----|----|-----|-----|------|-----------|----|-----|-----|-----------------|--|-----------------|--------------|--|--|--|
| <div>PROJECT INFORMATION</div> <div>SCOPE OF WORK: UNMANNED TELECOMMUNICATIONS FACILITY MODIFICATIONS</div> <div>SITE ADDRESS: 497 MIDDLE TURNPIKE MANSFIELD, CT 06268</div> <div>LATITUDE: 41.8254 N 41° 49' 32.72" N</div> <div>LONGITUDE: 72.2816 W 72° 16' 54.46" W</div> <div>JURISDICTION: NATIONAL, STATE & LOCAL CODES OR ORDINANCES</div> <div>CURRENT USE: TELECOMMUNICATIONS FACILITY</div> <div>PROPOSED USE: TELECOMMUNICATIONS FACILITY</div> | | <div></div> <div>SITE NUMBER: CT5822</div> <div>SITE NAME: MANSFIELD FOUR CORNERS</div> | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div>DRAWING INDEX</div> <div>T-1 TITLE SHEET</div> <div>GN-1 GENERAL NOTES</div> <div>A-1 COMPOUND & EQUIPMENT PLAN</div> <div>A-2 ANTENNA & ELEVATION PLAN</div> <div>A-3 DETAILS</div> <div>A-4 DETAILS</div> <div>G-1 PLUMBING DIAGRAM & GROUNDING DETAILS</div> | | <div>REV</div> <div>1</div> <div>1</div> <div>1</div> <div>1</div> <div>1</div> <div>1</div> | <div>VICINITY MAP</div> <div>DIRECTIONS TO SITE: START OUT GOING NORTHEAST ON ENTERPRISE DR TOWARD CAPITOL BLVD. 0.4 MI. TURN LEFT ONTO CAPITOL BLVD. 0.3 MI. TURN LEFT ONTO WEST ST. 0.2 MI. MERGE ONTO I-91 N VIA THE RAMP ON THE LEFT TOWARD HARTFORD. 7.8 MI. MERGE ONTO CT-15 N VIA EXIT 29 TOWARD I-84 E/E. HARTFORD/BOSTON. 2.1 MI. CT-15 N BECOMES I-84 E. 16.0 MI. TAKE THE CT-195 EXIT, EXIT 68, TOWARD TOLLAND/MANSFIELD. 0.2 MI. TURN RIGHT ONTO MERROW RD/CT-195. CONTINUE TO FOLLOW CT-195. 5.7 MI. TURN RIGHT ONTO MIDDLE TURNPIKE/US-44. 0.7 MI. END AT 497 MIDDLE TPKE. MANSFIELD, CT 06268.</div> <div></div> | <div>GENERAL NOTES</div> <div>1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.</div> <div>2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.</div> <div>3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.</div> | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <div>CALL</div> <div> BEFORE YOU DIG </div> <div>CALL TOLL FREE 800-922-4455</div> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <div>UNDERGROUND SERVICE ALERT</div> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div>1600 OSGOOD STREET BUILDING 20 NORTH, SUITE 2-101 N. ANDOVER, MA 01845</div><div>TEL: (978) 557-5553 FAX: (978) 336-5586</div></div> | <div><div>a UniTek GLOBAL SERVICES company</div><div>800 MARSHALL PHELPS ROAD UNIT#: 2A WINDSOR, CT 06095</div></div> | <div>SITE NUMBER: CT5822</div> <div>SITE NAME: MANSFIELD FOUR CORNERS</div> <div>497 MIDDLE TURNPIKE MANSFIELD, CT 06268 TOLLAND COUNTY</div> | <div></div> <div>500 ENTERPRISE DRIVE ROCKY HILL, CT 06067</div> | <table><tr><td>1</td><td>04/17/12</td><td>ISSUED FOR CONSTRUCTION</td><td>SF</td><td>DC</td><td>DNH</td></tr><tr><td>0</td><td>04/11/12</td><td>ISSUED FOR REVIEW</td><td>SF</td><td>DC</td><td>DPH</td></tr><tr><td>NO.</td><td>DATE</td><td>REVISIONS</td><td>BY</td><td>CHK</td><td>APP</td></tr><tr><td colspan="2">SCALE: AS SHOWN</td><td>DESIGNED BY: DC</td><td colspan="2">DRAWN BY: SF</td><td></td></tr></table> <div></div> | 1 | 04/17/12 | ISSUED FOR CONSTRUCTION | SF | DC | DNH | 0 | 04/11/12 | ISSUED FOR REVIEW | SF | DC | DPH | NO. | DATE | REVISIONS | BY | CHK | APP | SCALE: AS SHOWN | | DESIGNED BY: DC | DRAWN BY: SF | | | <div>AT&T</div> <div>TITLE SHEET (LTE)</div> <div>JOB NUMBER: 5822.01</div> <div>DRAWING NUMBER: T-1</div> <div>REV: 1</div> |
| 1 | 04/17/12 | ISSUED FOR CONSTRUCTION | SF | DC | DNH | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 04/11/12 | ISSUED FOR REVIEW | SF | DC | DPH | | | | | | | | | | | | | | | | | | | | | | | | |
| NO. | DATE | REVISIONS | BY | CHK | APP | | | | | | | | | | | | | | | | | | | | | | | | |
| SCALE: AS SHOWN | | DESIGNED BY: DC | DRAWN BY: SF | | | | | | | | | | | | | | | | | | | | | | | | | | |

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER

ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

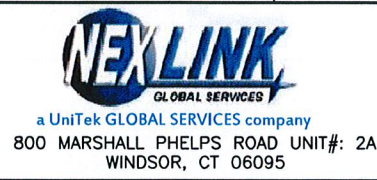
1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR - NEXLINK
SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)
OWNER - AT&T MOBILITY
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 ($F_y = 36$ ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E ($F_y = 36$ ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
16. CONSTRUCTION SHALL COMPLY WITH UMTS SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY SITES."
17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
20. APPLICABLE BUILDING CODES:
SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
BUILDING CODE: 2003 IBC WITH 2005 CT SUPPLEMENT & 2009 CT AMENDMENTS
ELECTRICAL CODE: REFER TO ELECTRICAL DRAWINGS
LIGHTENING CODE: REFER TO ELECTRICAL DRAWINGS

SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

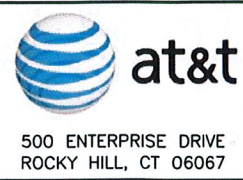
- AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)
- MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION;
- TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-F, STRUCTURAL STANDARDS FOR STEEL
- ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

| ABBREVIATIONS | | | | | |
|---------------|--------------------------|----------|--------------------|------|----------------------------|
| AGL | ABOVE GRADE LEVEL | G.C. | GENERAL CONTRACTOR | RF | RADIO FREQUENCY |
| AWG | AMERICAN WIRE GAUGE | MGB | MASTER GROUND BUS | | |
| BCW | BARE COPPER WIRE | MIN | MINIMUM | TBD | TO BE DETERMINED |
| BTS | BASE TRANSCEIVER STATION | PROPOSED | NEW | TBR | TO BE REMOVED |
| EXISTING | EXISTING | N.T.S. | NOT TO SCALE | TBRR | TO BE REMOVED AND REPLACED |
| EG | EQUIPMENT GROUND | REF | REFERENCE | | |
| EGR | EQUIPMENT GROUND RING | REF | REQUIRED | TYP | TYPICAL |



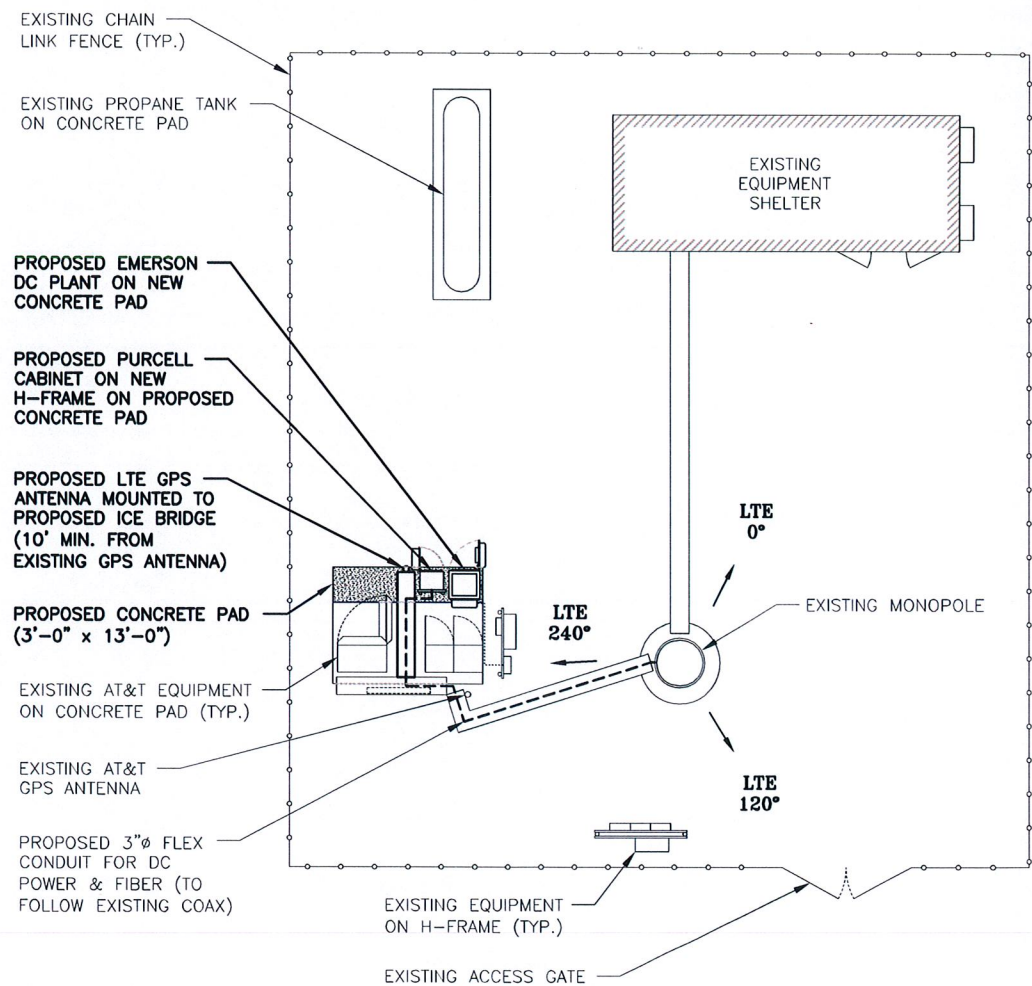
SITE NUMBER: CT5822
SITE NAME: MANSFIELD
FOUR CORNERS
497 MIDDLE TURNPIKE
MANSFIELD, CT 06268
TOLLAND COUNTY

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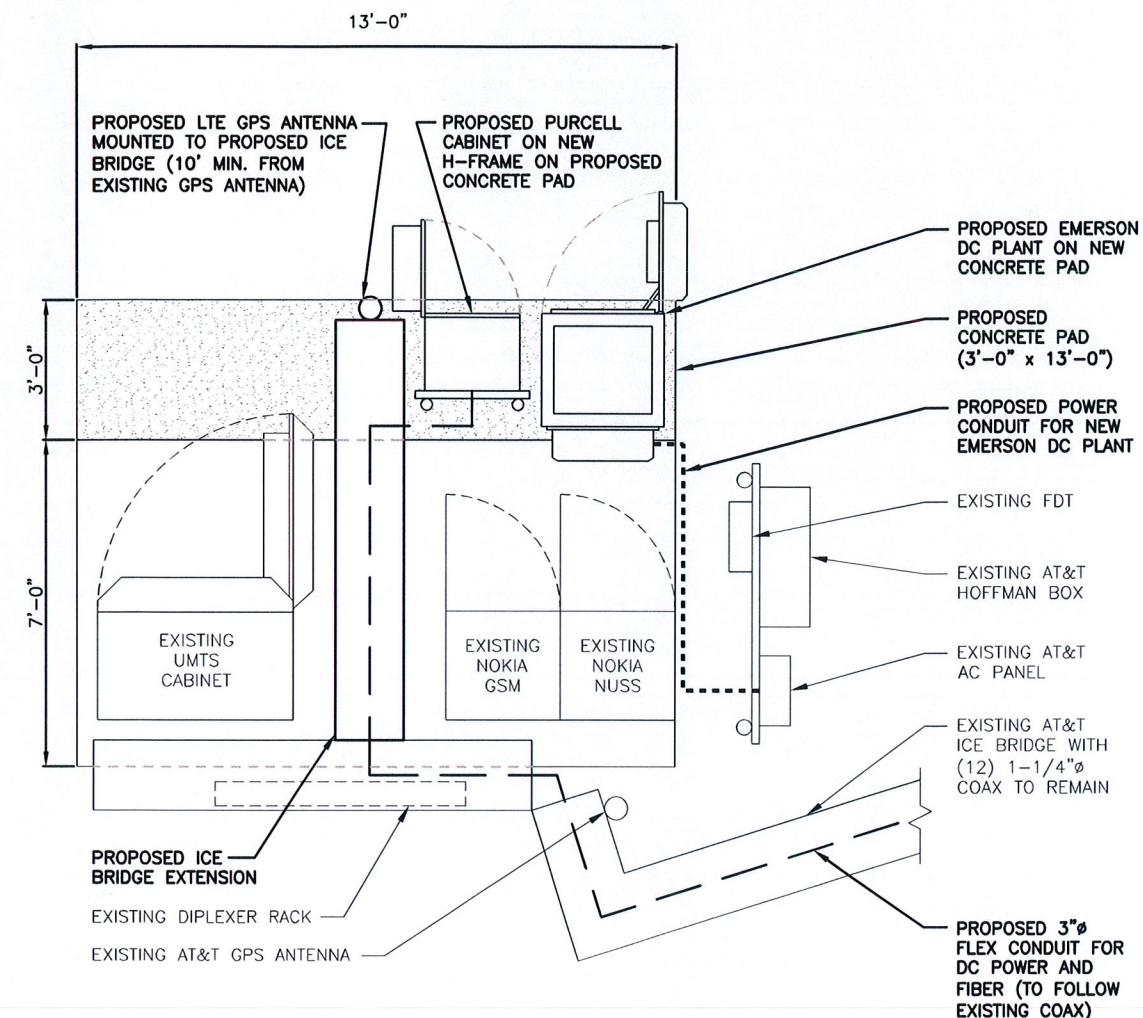


NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.



COMPOUND PLAN
SCALE: 1/8"=1'-0"



EQUIPMENT PLAN
SCALE: 1/2"=1'-0"



Hudson
Design Group, Inc.

1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 2-101
N. ANDOVER, MA 01845

TEL: (978) 557-5553
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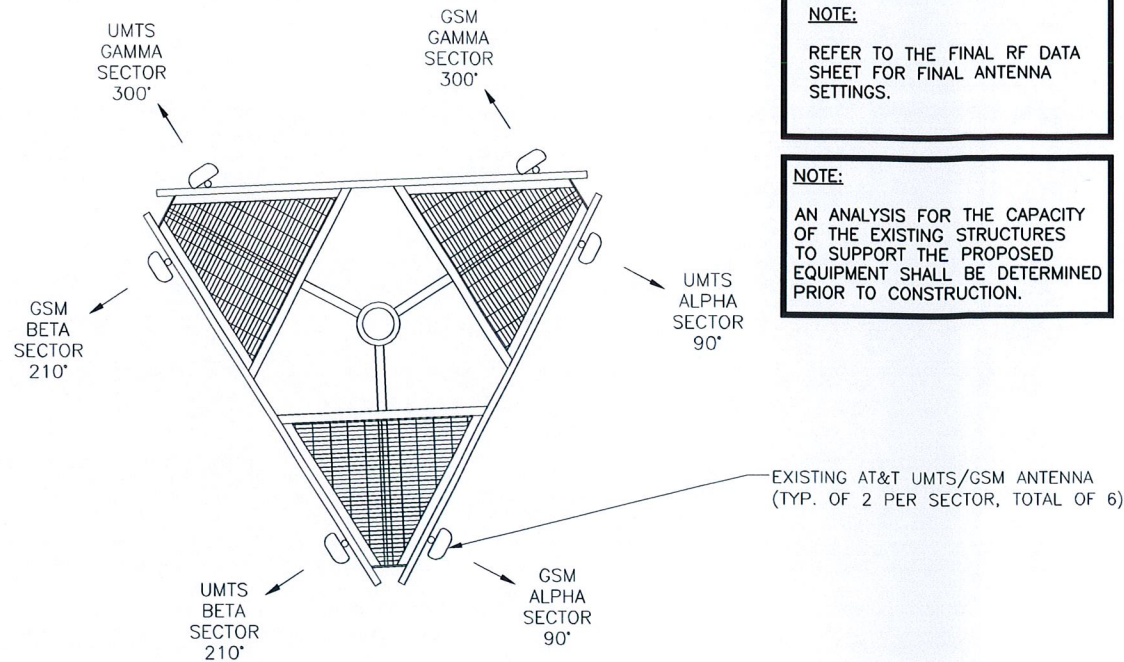
SITE NUMBER: CT5822
SITE NAME: MANSFIELD
FOUR CORNERS

497 MIDDLE TURNPIKE
MANSFIELD, CT 06268
TOLLAND COUNTY

at&t

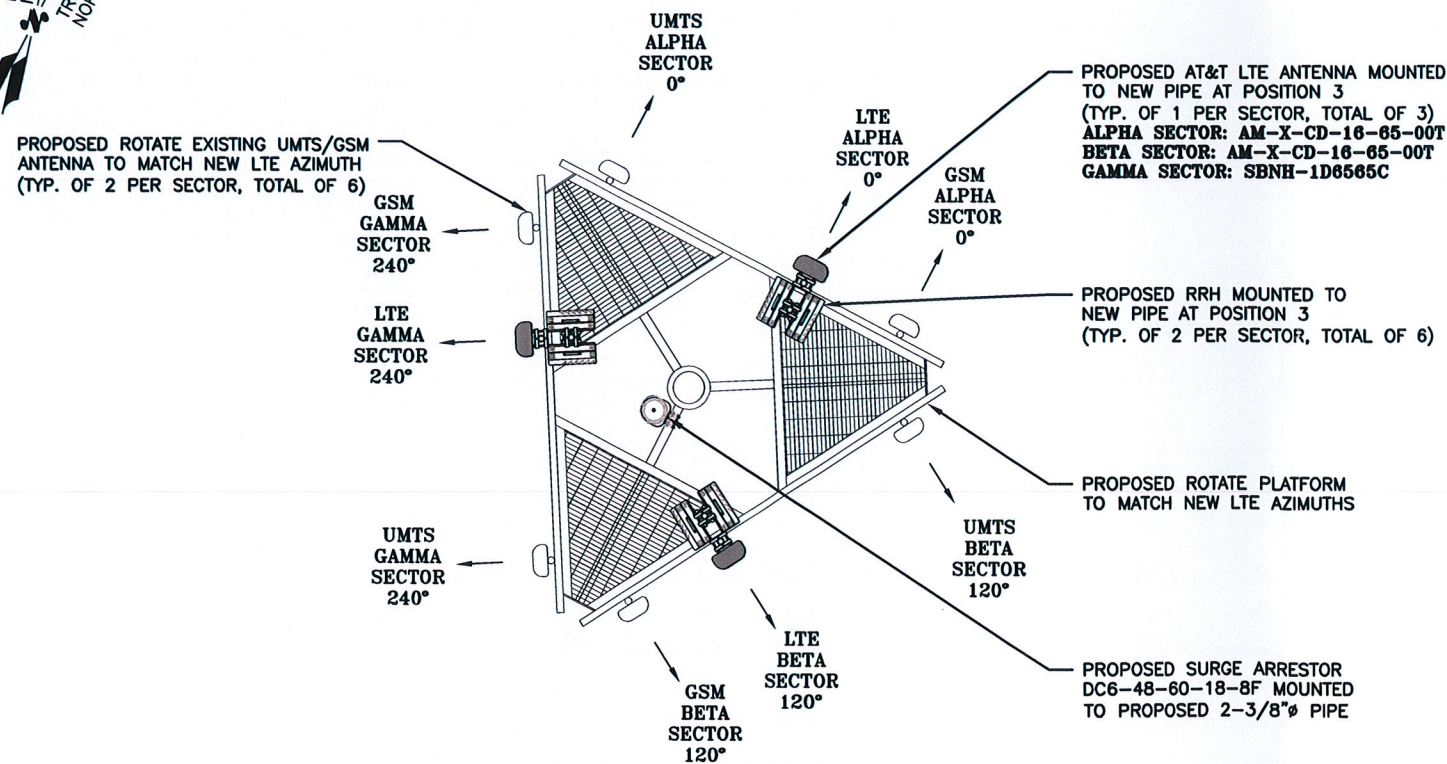
500 ENTERPRISE DRIVE
ROCKY HILL, CT 06067

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| | | | | AT&T | | | |
| | | | | COMPOUND & EQUIPMENT PLAN (LTE) | | | |
| 1 | 04/17/12 | ISSUED FOR CONSTRUCTION | SF | DC | DPH | | |
| 0 | 04/11/12 | ISSUED FOR REVIEW | SF | DC | DPH | | |
| NO. | DATE | REVISIONS | BY | CHK | APP | NO. | REV |
| SCALE: AS SHOWN | | | | DESIGNED BY: DC | | DRAWN BY: SF | |
| | | | | PROJECT NUMBER: 5822.01 | | DRAWING NUMBER: A-1 | |
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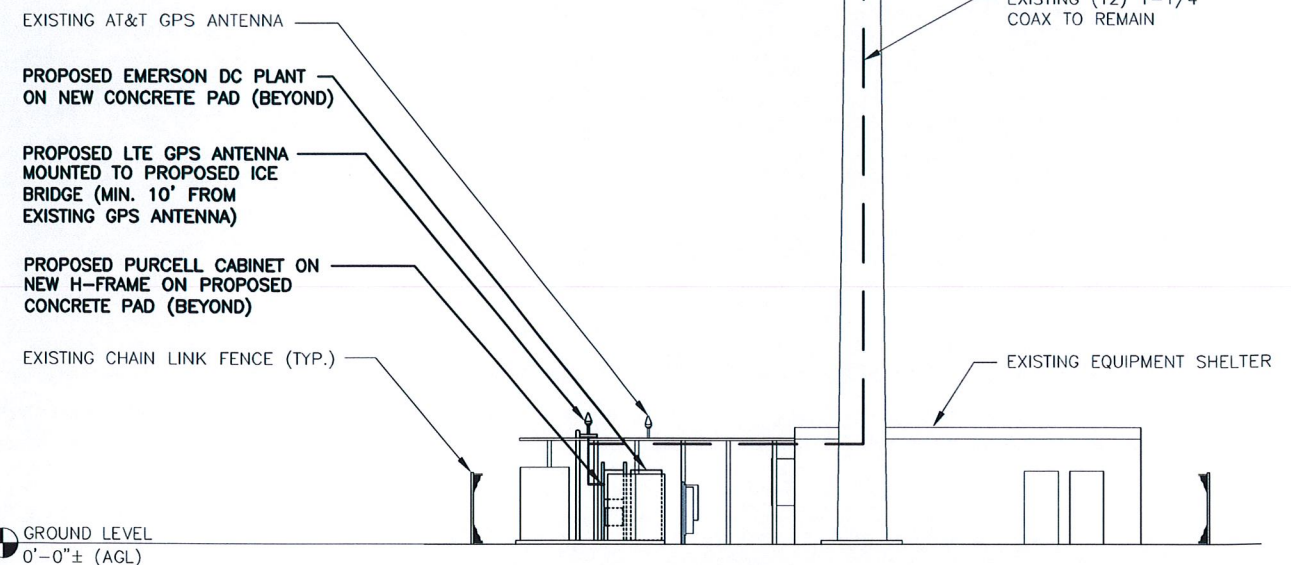
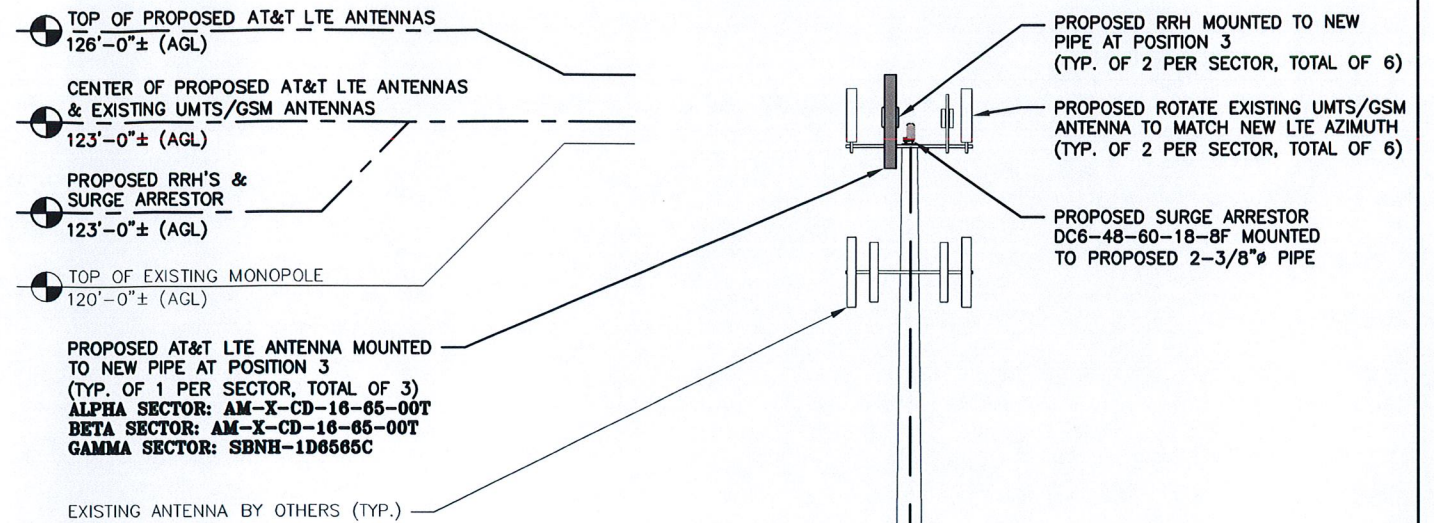
EXISTING UMTS/GSM ANTENNA PLAN

N.T.S.



PROPOSED LTE ANTENNA PLAN

N.T.S.



NORTH ELEVATION

SCALE: 1/8"=1'-0"

0 4'-0" 8'-0" 16'-0" 24'-0"

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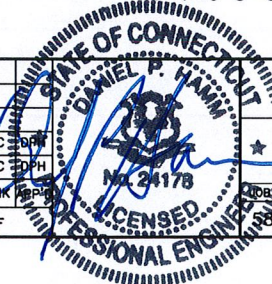


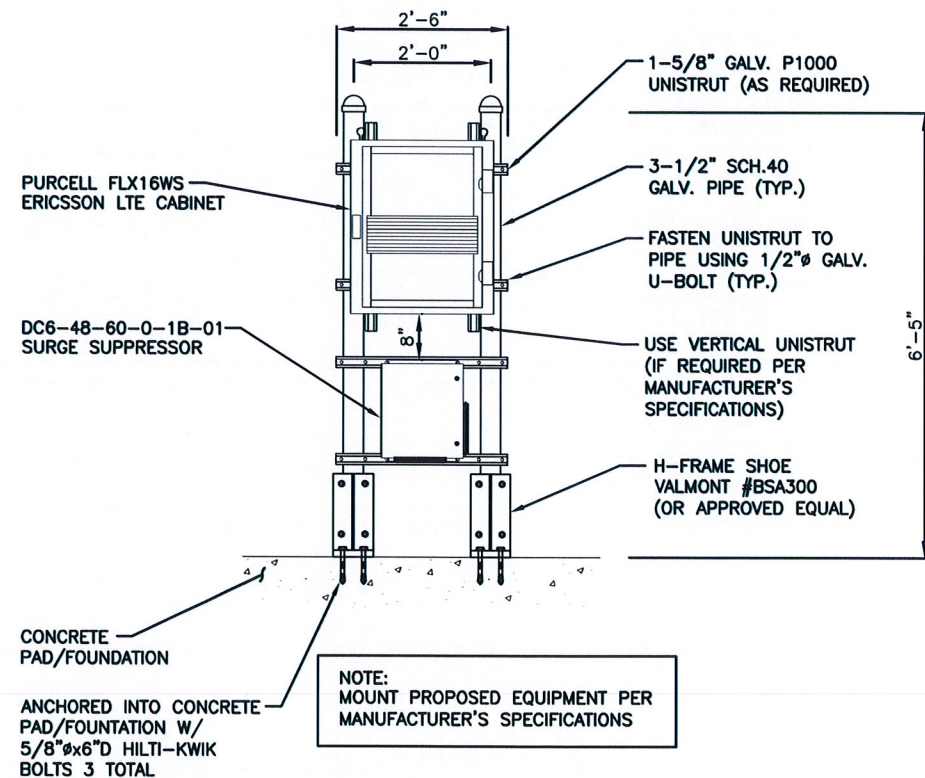
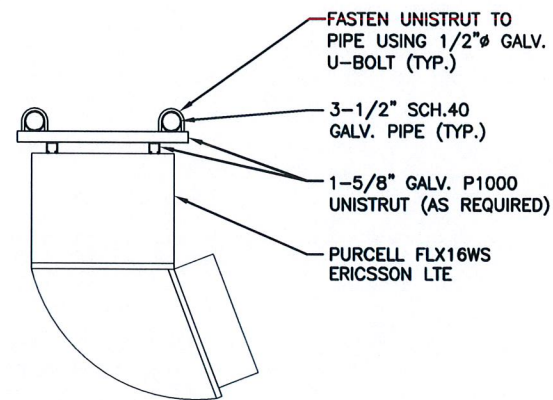
a UniTek GLOBAL SERVICES company
800 MARSHALL PHELPS ROAD UNIT# 2A
WINDSOR, CT 06095

SITE NUMBER: CT5822
SITE NAME: MANSFIELD
FOUR CORNERS
497 MIDDLE TURNPIKE
MANSFIELD, CT 06268
TOLLAND COUNTY

500 ENTERPRISE DRIVE
ROCKY HILL, CT 06067

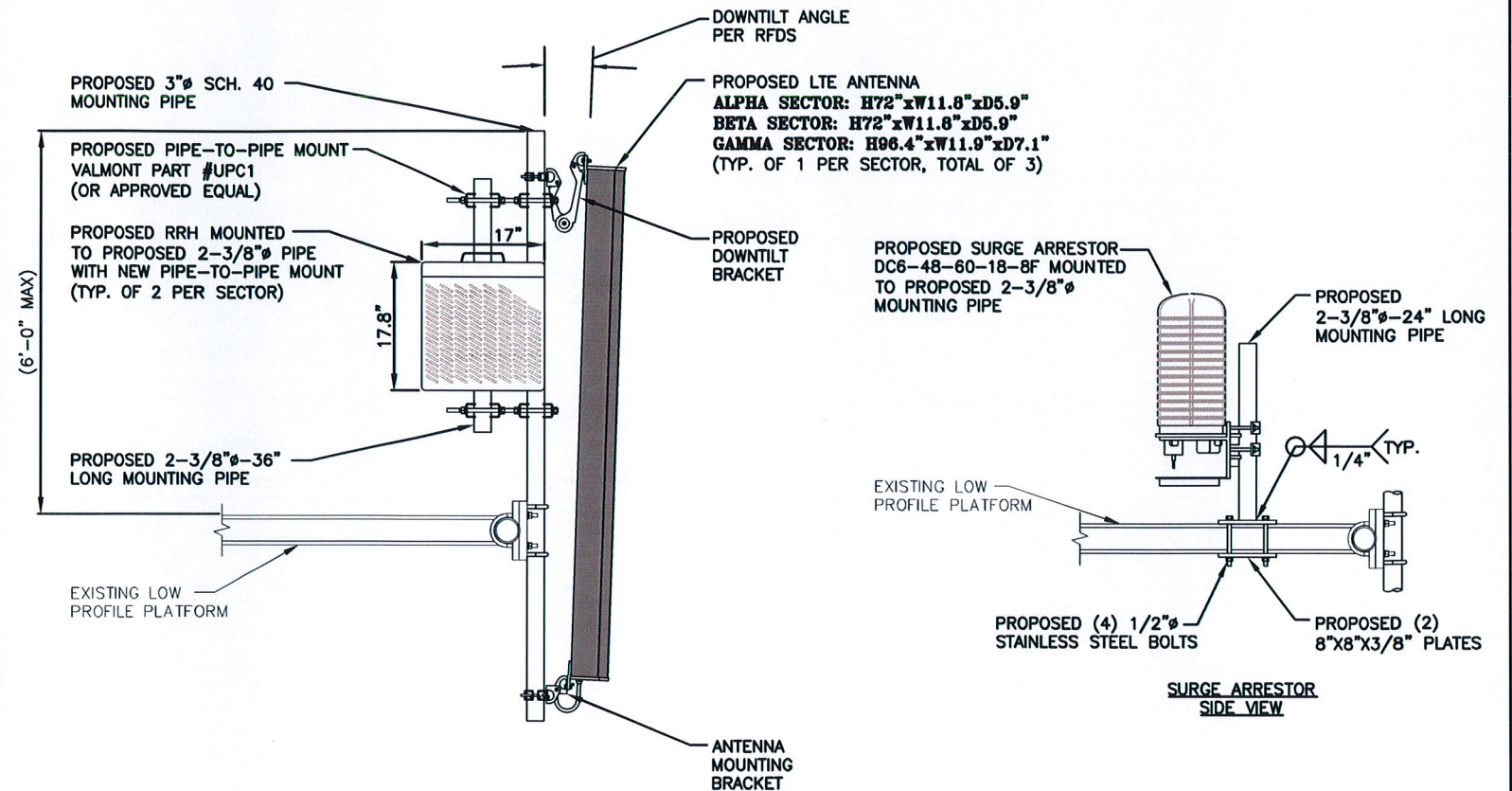
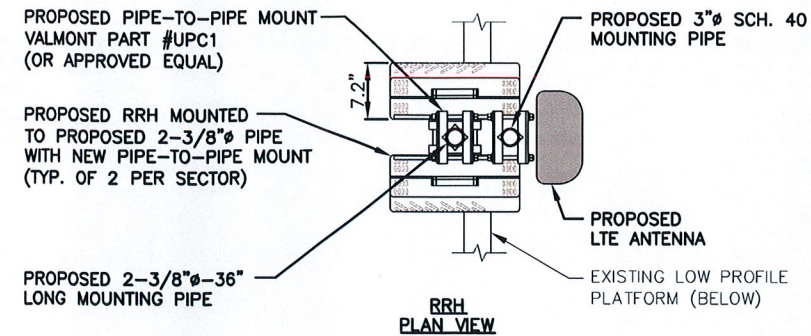
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| | | | | AT&T | | | |
| | | | | ANTENNA & ELEVATION PLAN (LTE) | | | |
| NO. | DATE | REVISIONS | BY | CHECKED | DRAWING NUMBER | REV | |
| 1 | 04/17/12 | ISSUED FOR CONSTRUCTION | SF | DC | 822.01 | | |
| 0 | 04/11/12 | ISSUED FOR REVIEW | SF | DC | | | |
| SCALE: AS SHOWN | | | | DESIGNED BY: DC | | | |
| | | | | DRAWN BY: SF | | | |





PROPOSED EQUIPMENT MOUNTING DETAIL

SCALE: N.T.S.



PROPOSED LTE ANTENNA, RRH & SURGE ARRESTOR MOUNTING DETAIL

SCALE: N.T.S.

NOTE:

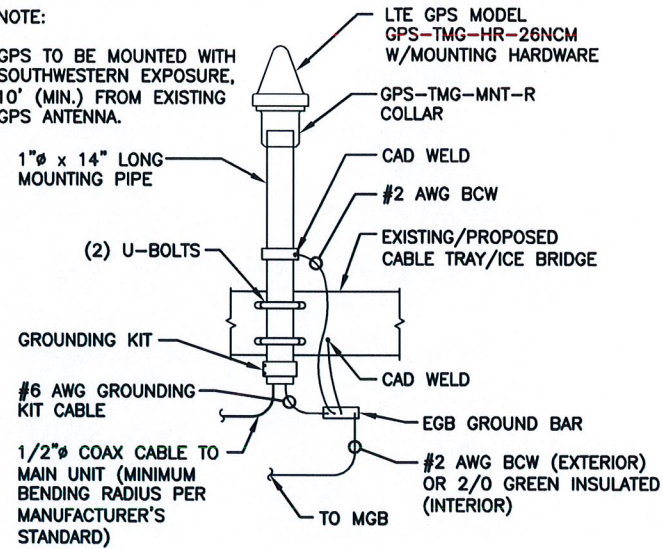
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

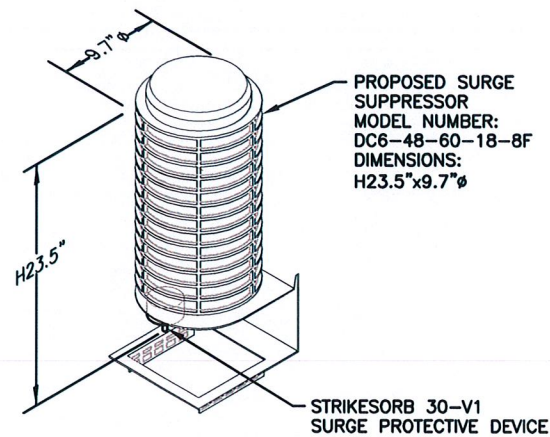
NOTE:

GPS TO BE MOUNTED WITH SOUTHWESTERN EXPOSURE, 10' (MIN.) FROM EXISTING GPS ANTENNA.



GPS MOUNTING DETAIL

SCALE: N.T.S.



NOTE:

MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DC SURGE SUPPRESSOR DETAIL

SCALE: N.T.S.

3'-0\"/>

1\"/>

CRUSHED STONE
SURFACE TREATMENT

COMPACTED CRUSHED STONE
OR GRAVEL (OPTIONAL;
THICKNESS AS REQUIRED)

EXCAVATE AS REQUIRED TO
REMOVE VEGETATION & TOPSOIL,
EXPOSE UNDISTURBED NATURAL
SUBGRADE & PLACE CRUSHED
STONE AS REQUIRED

PROPOSED CONCRETE PAD DETAIL

SCALE: N.T.S.

NEW CONC. PAD NOTES:

- REINF. W/ #4's @ 8" O.C. EA. WAY (MID-DEPTH).
- DOWEL NEW CONC. TO EXIST. W/ #4's @ 8" O.C. x 8" LONG. DRILL & EPOXY GROUT 4" INTO EXIST. CONC.
- REINF. SHALL BE ASTM A615-GRADE 60. SECURE IN PLACE.
- REINFORCEMENT IN EQUIPMENT SLAB TO BE WELDED AND BONDED TO GROUND RING

PROPOSED RRH
DIMENSIONS:
H17.8\"/>

NOTE:

MOUNT PER MANUFACTURER'S SPECIFICATIONS.

RRH DETAIL

SCALE: N.T.S.

NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

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ANDREW ICE BRIDGE SUPPORT P/N WB-LB12-3 AND 12" CHANNEL P/N MT-F501 OR EQUAL
ANDREW TRAPEZE KIT FOR 2 RUNGS P/N WB-TD12 OR EQUAL

3-1/2" SCHEDULE 40 PIPE COLUMN, ANDREW P/N MF-273 OR EQUAL (10' O.C.)

ANCHORED INTO CONCRETE EQUIPMENT PAD/TOWER/MONOPOLE FOUNDATION W/ 5/8" HILTI-KWIK BOLTS 4 TOTAL (6" MIN. EMBEDMENT)

12"x12"x1/2" PLATE (TYP.)

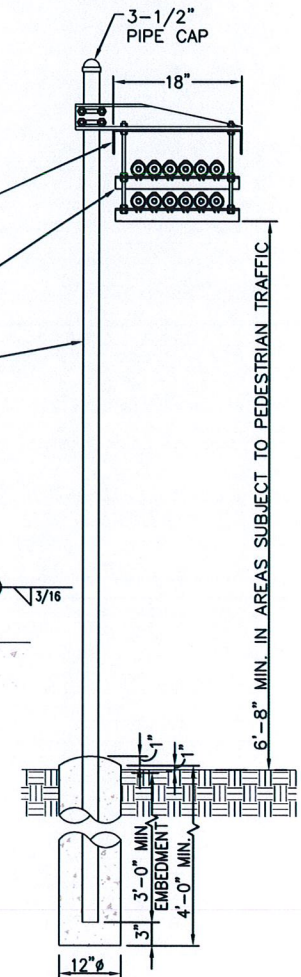
EXISTING CONCRETE PAD

5/8" BOLT, NUT, WASHER & LOCK WASHER
12"x12"x1/2" PLATE (TYP.)

EXISTING GRATING

NOTE:

ALL STEEL IS GALVANIZED. ALL BOLTS TO BE FURNISHED W/ WASHERS AND NUTS.



COAX ICE BRIDGE DETAIL

SCALE: N.T.S.

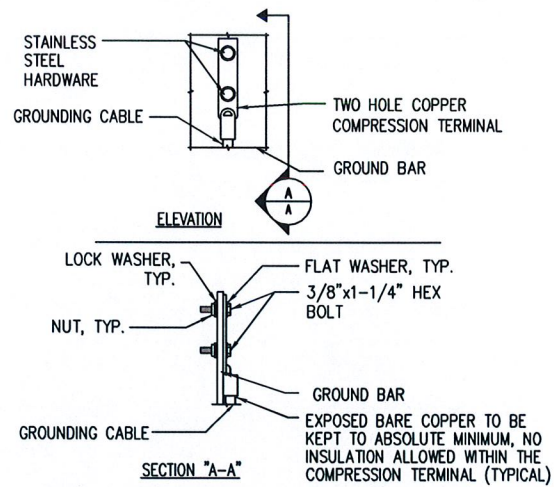
Hudson
Design Group, Inc.
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 2-101
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

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at&t
500 ENTERPRISE DRIVE
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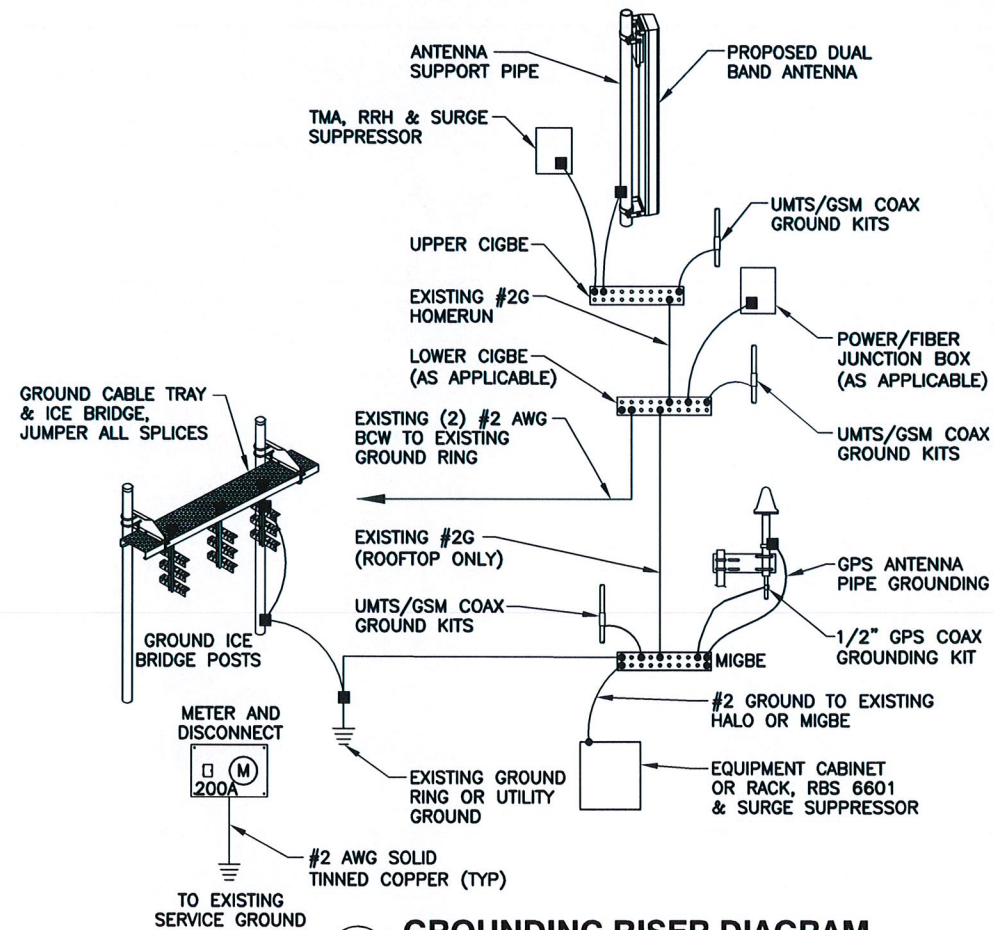
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|-----------------|----------|-------------------------|--------------|-----|-------|------------------|----------------|
| | | | | | | AT&T | |
| | | | | | | DETAILS (LTE) | |
| 1 | 04/17/12 | ISSUED FOR CONSTRUCTION | SF | DC | DEH | | |
| 0 | 04/11/12 | ISSUED FOR REVIEW | SF | DC | DEH | | |
| NO. | DATE | REVISIONS | BY | CHK | APP'D | JOB NUMBER | DRAWING NUMBER |
| SCALE: AS SHOWN | | DESIGNED BY: DC | DRAWN BY: SF | | | 05822.01 | A-4 |
| | | | | | | | 1 |



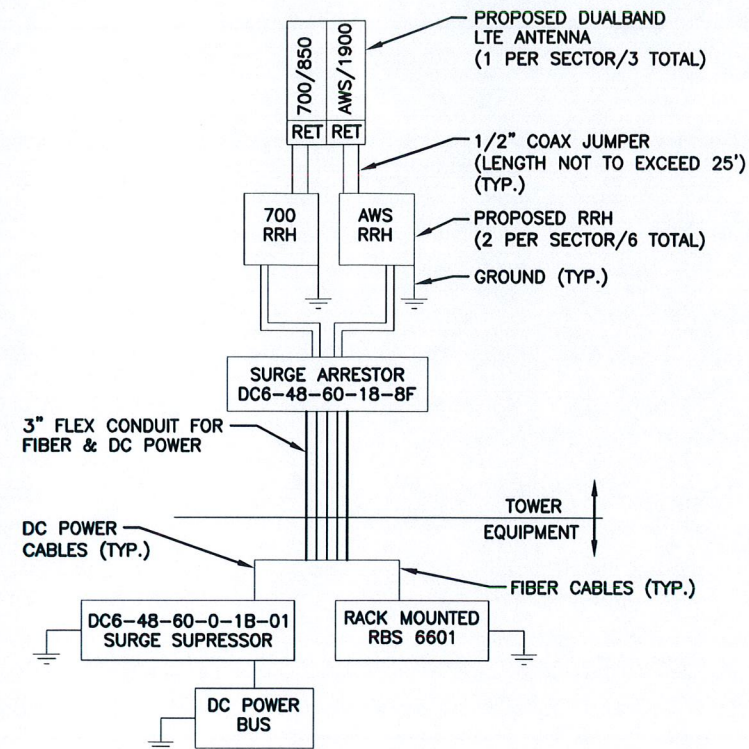
- NOTE:
- "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
 - OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
 - CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB.

TYPICAL GROUND BAR CONNECTION DETAIL

1
—
N.T.S.



3
—
N.T.S.



NOTES:

- CONTRACTOR TO CONFIRM ALL PARTS.
- INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS.

2
—
N.T.S.

EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" - SURGE PRODUCERS

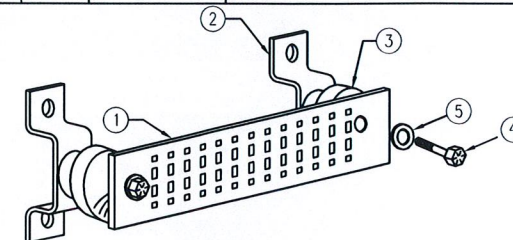
CABLE ENTRY PORTS (HATCH PLATES) (#2)
GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
TELCO GROUND BAR
COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
+24V POWER SUPPLY RETURN BAR (#2)
-48V POWER SUPPLY RETURN BAR (#2)
RECTIFIER FRAMES.

SECTION "A" - SURGE ABSORBERS

INTERIOR GROUND RING (#2)
EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
BUILDING STEEL (IF AVAILABLE) (#2)

| WIRELESS SOLUTIONS INC. | | | |
|-------------------------|------|--------------|------------------------------|
| NO. | REQ. | PART NO. | DESCRIPTION |
| ① | 1 | HLGB-0420-IS | SOLID GND. BAR (20"x4"x1/4") |
| ② | 2 | — | WALL MTG. BRKT. |
| ③ | 2 | — | INSULATORS |
| ④ | 4 | — | 5/8"-11x1" H.H.C.S. |
| ⑤ | 4 | — | 5/8 LOCKWASHER |

4
—
N.T.S.



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WINDSOR, CT 06095

SITE NUMBER: CT5822
SITE NAME: MANSFIELD
FOUR CORNERS
497 MIDDLE TURNPIKE
MANSFIELD, CT 06268
TOLLAND COUNTY

at&t

500 ENTERPRISE DRIVE
ROCKY HILL, CT 06067

| REVISIONS | | | | AT&T | | | |
|-----------------|----------|-------------------------|----|---------------------|-------|--|-----|
| NO. | DATE | REVISIONS | BY | CHK | APP'D | DRAWING NUMBER | REV |
| 1 | 04/17/12 | ISSUED FOR CONSTRUCTION | SF | DC | RET | PLUMBING DIAGRAM & GROUNDING DETAILS (LTE) | 1 |
| 0 | 04/11/12 | ISSUED FOR REVIEW | SF | DC | RET | | |
| SCALE: AS SHOWN | | | | DESIGNED BY: DC | | | |
| DRAWN BY: SF | | | | DRAWING NUMBER: G-1 | | | |